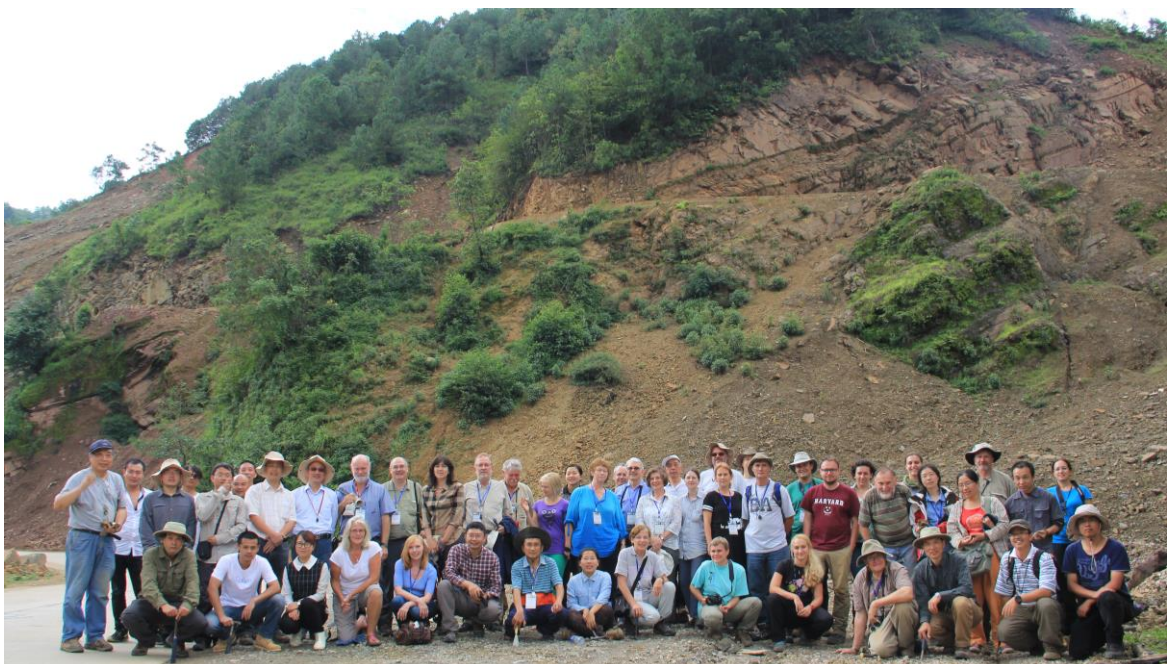


SILURIAN TIMES

NEWSLETTER OF
THE INTERNATIONAL SUBCOMMISSION ON SILURIAN STRATIGRAPHY (ISSS)
(INTERNATIONAL COMMISSION ON STRATIGRAPHY, ICS)

No. 22 (for 2014)

Edited by ZHAN Renbin



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CONTENTS

CHAIRMAN'S CORNER	3
ANNUAL REPORT OF SILURIAN SUBCOMMISSION FOR 2014	5
REPORTS OF ACTIVITIES IN 2014	14
1. IGCP 591 Annual Meeting in Tartu Estonia 2014 jointly with ISSS	14
2. IGCP 591 Field Workshop in Kunming 2014 jointly with ISSS, ISOS and ISCS	16
3. Business Meeting of ISSS in 2014	19
The ISSS Award: Koren' Award	21
1. Guidelines for the ISSS Award	21
2. Call for nomination of the first ISSS Award	22
ANNOUNCEMENTS OF MEETINGS	23
1. Fifth International Silurian Symposium and Fifth Annual Meeting of IGCP 591 in Quebec City, Canada	23
2. ISSS GSSP Workshop–Prague 2015: GSSPs of the Silurian stages revisited	29
3. Upcoming Silurian Theme Session/Field Trip in the Western Great Lakes Region	32
4. All-Russia Lithological Symposium: Geology of Reefs	33
5. The contribution of fossils to chronostratigraphy: A special session at the STRATI 2015	35
SILURIAN RESEARCH 2014: NEWS FROM THE MEMBERS	37
RECENT PUBLICATIONS BY SILURIAN EXPERTS	64
MEMBERSHIP NEWS	80
1. List of all Silurian colleagues and interested experts	80
2. Brief introduction of new Silurian workers	85

Cover photo

Group photo of the post-conference field excursion of the ISSS and IGCP 591 Kunming meeting at Laojianshan of Baoshan, western Yunnan, SW China. The rocks in the picture are siliciclastic mudstone of the Shihtien Formation (Darriwilian, Middle Ordovician) yielding the famous *Saucrorthis* brachiopod fauna. Altogether 51 Lower Paleozoic experts (including 35 from outside China) participated in this 6-day field excursion visiting the Early Paleozoic (mainly Ordovician and Silurian) rock sequences and fossils of South China, Indo-China and Sibumasu paleoplates in northeastern and western Yunnan Province.

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SILURIAN TIMES Number 22 (for 2014)

Chairman's Corner

Dear Silurian Colleagues,

2014 was another active year for the ISSS. Our joint meeting with the Cambrian and Ordovician subcommissions and IGCP 591 in Kunming, China, was an outstanding success. I wish to thank the Organizing Committee of this meeting for organizing and hosting this excellent conference and its associated field trips. A conference volume of papers from this meeting is being published in *Palaeoworld* and many of these papers are already available online, thanks again to the efforts of Zhan Renbin, Jin Jisuo and David Harper and their team of guest associate editors and, of course, the authors.

Prior to the Kunming meeting several ISSS executive members participated in a field trip to visit a potential GSSP candidate sections for the bases of the Aeronian and Telychian stages in the Shennongjia District, western Hubei Province, central China. Funding for this trip was provided by a US National Science Foundation grant to ICS. Thanks to ICS Chair Stan Finney for his support for this trip. There was also workshop at the Kunming meeting to present results of study of GSSP candidate sections for these and other Silurian boundaries and discuss these results.

An important proposal made at the ISSS business meeting in Kunming was to create an ISSS Award, which is intended to recognize and encourage excellence in research related to Silurian stratigraphy and paleontology by younger researchers. It will be presented every four years at the Silurian Symposium. The award is now formally termed the "Koren' Award" in honor of the late Dr. Tatiana Koren' (1936-2010), former Secretary and Vice Chair of the Silurian Subcommittee (as well as member of Ordovician and Devonian subcommissions) and a global expert on graptolites who made many lasting contributions to the biostratigraphy of the Silurian System (see Memorial in 2011 in *Silurian Times* (No. 18) and *Ordovician News* (No. 28)). This proposal has received the unanimous approval of the ISSS voting members and a selection committee has been created. For more information about the award, please contact one of the selection committee members: Carl Brett, Renbin Zhan, and Petr Štorch.

Through our association with IGCP 519, Silurian Subcommittee members also participated in other conferences in 2014:

- Gondwana 15, Madrid, Spain, July 14-18, 2014
- IGCP 591 4th Annual Meeting, Estonia, June 10-19, 2014

The planned highlights of ISSS activities for 2015 will be the 5th International Symposium on the Silurian System, held jointly with the Fifth Annual Meeting of IGCP 591, in Quebec City, Canada, and the ISSS GSSP Workshop to be held in Prague, following the Strati 2015 meeting in Graz.

The circulars for both of those meeting are included in this issue of Silurian Times.

I would like to give my thanks to André Desrochers, Aicha Achab, Jisuo Jin, Denis Lavoie, and Michel Malo, who have been working hard to get the Quebec City meeting and its field trips organized. The meeting will take place in Quebec City, July 8-11,

2015, with a pre-meeting field trip to visit excellent Silurian and other early-mid-Paleozoic exposures in Gaspé, Quebec, a one-day mid-conference trip in the Quebec City area, and post-conference excursions to Anticosti Island. We are planning publication of the conference proceedings in a special issue of Canadian Journal of Earth Sciences.

The ISSS GSSP Workshop will take place in Prague, Czech Republic, July 30-31, including one day of technical presentations and discussions, and a one-day field trip to visit potential GSSP candidate sections for the base of Aeronian and Homerian in the Prague region. Many thanks to Petr Štorch and the other members of the organizing committee for their work in preparing for this workshop.

I would also like to encourage ISSS members to continue research efforts toward a better understanding and revision of our Silurian GSSPs. I think that we built a strong momentum of interest in this, particularly at the Ludlow and Kunming meetings, and I and the ICS executive would like to see this momentum continue toward successful updating of our understanding and definitions of our series and stage boundaries. A working group for the base of the Aeronian, being led by Petr Štorch has been active. There were several talks and posters dealing with the restudy of the Base of Aeronian at the Lund meeting and a full workshop for discussion of this boundary and potential new candidate sections was organized in Kunming in August, as noted above. At that same meeting I proposed creation of a working group to restudy the Base of Telychian, which was approved at that meeting. Let me know if you are interested in working on this boundary. If you are interested in participating in work on the base of the Aeronian you should contact Petr Štorch. Of course, any advances in the work on any of the other problematic boundaries would also be welcome. We have some funding from the ICS to assist with work on our GSSPs so if you are interested, please contact me. In particular, some funding will be available for participation in the Prague workshop, although at the present time I am not sure how much.

Looking forward to seeing you in Quebec City and/or Prague.

Michael J. Melchin
Chair, Subcommittee on Silurian Stratigraphy



**International Commission on Stratigraphy
Subcommission on Silurian Stratigraphy**

ANNUAL REPORT 2014

1. TITLE OF CONSTITUENT BODY

International Subcommission on Silurian Stratigraphy (ISSS)

Submitted by:

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2. OVERALL OBJECTIVES, AND FIT WITHIN IUGS SCIENCE POLICY

Mission statement

The objectives of the Subcommission relate to three main aspects of IUGS policy:

- (1) The development of an internationally agreed scale of chronostratigraphic units, fully defined by GSSPs at Series and Stage levels and related to a hierarchy of units (Substages, Standard Zones, Subzones etc.) to maximize relative time resolution within the Silurian Period;
- (2) Establishment of frameworks and mechanisms to encourage international collaboration in understanding the evolution of the Earth during the Silurian Period;
- (3) Working towards an international policy concerning conservation of geologically important sites (such as GSSPs, global and regional stratotype sections, etc.).

Goals

- Rationalization of global chronostratigraphical classification.
- Intercalibration of fossil biostratigraphies, integrated zonations, and recognition of global datums.
- Establishment of magneto- and chemo-stratigraphic scales.
- Redefinition of stage boundaries and restudy of global stratotype sections.
- Correlation of Silurian rock successions and events, including marine and non-marine.

3a. CHIEF ACCOMPLISHMENTS AND PRODUCTS IN 2014

Silurian Times No 21 was edited by the secretary, Renbin Zhan, and distributed in March, 2014, posted on the web site for the ISSS, and circulated as an email attachment to all titular, corresponding and interested members of the Subcommission. It contained the reports on previous meetings, announcements of upcoming meetings and publications, and the latest news and recent publications on Silurian research.

The IGCP Project 591, Field Workshop 2014, was held jointly with the International Subcommission on Silurian Stratigraphy (ISSS), the International Subcommission on Ordovician Stratigraphy (ISOS) and the International Subcommission on Cambrian Stratigraphy (ISCS), 12–21 August, 2014, in Kunming, China. The meeting included two days of talks and poster presentations, a mid-conference field trip that mainly visited localities featuring the Chengjiang Biota, and a 6-day post-conference field excursion to investigate the Lower Paleozoic successions and fossils in northeastern Yunnan Province (western South China paleoplate) and western Yunnan Province (Indo-China and Sibumasu paleoplates). The meeting was very well organized and attended and strong commendations are extended to the organizing committee of this meeting on behalf of the ISSS.

Work proceeds on the restudy of potential GSSP candidate sections for the Base of Wenlock and the Base of Aeronian and new work has begun on restudy of the base of the Telychian Stage. Seven papers were presented at the IGCP 591/ISSS meeting in Kunming pertaining to recent progress related to these boundaries. In addition, the working group for the Base of Aeronian Stage GSSP held a field trip to visit a proposed candidate section in the Shennongjia District of western Hubei Province in China in early August. Six ISSS titular members participated in the field trip, which was supported by funding from an NSF grant to ICS and also the Nanjing Institute of Geology and Palaeontology. The ISSS particularly thanks Drs Junxuan Fan and Qing Chen, as well as several of their students and colleagues, for their hard work in organizing this trip. This trip also examined a section that is being proposed as a candidate for the restudy of the base of the Telychian Stage GSSP.

The ISSS is a key partner in IGCP 591 – The Early to Middle Paleozoic Revolution. The following additional IGCP 591 meetings occurred in 2014, involving the ISSS members of IGCP 591:

- IGCP 591 4th Annual Meeting. Estonia, June 10-19, 2014
- Who Will Build the 21st Century? Addressing Critical Demographic Gaps in the Geosciences and Our Ability to Research, Assess, and Utilize Our Natural Resources. A two-day symposium hosted by the University of Iowa, Saturday, May 31st and Sunday, June 1st, 2014. Co-sponsored by IGCP 591.

A new award, to be given by the ISSS once every four years at the International Silurian Symposium, was initiated at the Lund meeting last year and approved in principle at the Kunming meeting this year to recognize outstanding research contributions by young Silurian researchers, particularly post-graduate researchers under the age of 40. The details of this award are currently under consideration and discussion by the ISSS titular members.

3b. ISSS MAJOR PUBLICATIONS IN 2014

A volume of papers from the 2013 Lund meeting was published as a special issue of the journal GFF (the journal of the Geological Society of Sweden) volume 136, issue 1, 2014, pages 1-340, EPGC - Early Palaeozoic Global Change, edited by Mikael Calner, Oliver Lehnert, and Per Ahlberg.

Zhan Renbin and Huang Bing (eds) 2014. IGCP Project 591 Field Workshop 2014 (with ISSS, ISOS and ISCS) Extended Summary, Kunming China, 12-21 August, 2014, Extended Summary. Nanjing University Press. 246 p.

Zhang Yuandong, Wang Yi, Zhan Renbin, Fan Junxuan, Zhou Zhiqiang and Fang Xiang, 2014. Ordovician and Silurian Stratigraphy and Palaeontology of Yunnan, Southwest China. Science Press, Beijing, 138 p.

A publication of the proceedings of the Kunming meeting is currently in preparation as two normal issues of the journal *Palaeoworld* (the first and second issues of 2015), edited by Renbin Zhan, Jisuo Jin and David Harper.

3c. CHIEF PROBLEMS ENCOUNTERED IN 2014

There remains the old problem related to difficulties in obtaining grants for research on stratigraphical topics and travel to meetings of Subcommission. Applications are often given low priority by national grant-awarding agencies in most countries.

4a. WORK PLAN, CRITICAL MILESTONES, ANTICIPATED RESULTS AND COMMUNICATIONS TO BE ACHIEVED NEXT YEAR (2015):

Regular updating the website for Silurian Subcommission by Junxuan Fan. We gratefully acknowledge the support of the Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences for this work.

Publication of Silurian Times Newsletter 22 (scheduled to be out by the end of March 2015), editor Renbin Zhan.

The 5th International Symposium on the Silurian System will be held jointly with the 5th Annual Meeting of the IGCP 591 in Quebec City, Canada, July 8 – 10, 2015. The proposed schedule is as follows:

- July 4–7, 2015: Pre-conference excursion in the Gaspé Peninsula
- July 8–10, 2015: Scientific sessions at the INRS-ETE Complex, Quebec City
- July 11–17, 2015: Post-conference excursions on Anticosti Island and St. Lawrence Lowlands

The annual ISSS business meeting will be held at this conference.

This meeting will result in publication of the abstracts volume, field guidebooks, and a special issue of Canadian Journal of Earth Sciences for the conference proceedings papers.

The ISSS will participate in STRATI 2015 — 2nd International Congress on Stratigraphy to be held in Graz, Austria, 19–23 July 2015.

ISSS members continue to collaborate on the process of full integration of the various regional and global biostratigraphic, lithostratigraphic, sequence stratigraphic, and chemostratigraphic scales for the entire Silurian. This integration is essential for refinement of the Silurian time scale and high-resolution correlation of Silurian events. In addition, some ISSS members are focusing on generation of new, high-resolution radiometric dates that are well constrained within the Silurian time scale. This is essential to achieve better calibration of time scale, which has been a serious weakness for the Silurian System.

4b. SPECIFIC GSSP FOCUS FOR 2014

As noted above, GSSPs currently under active restudy are the bases of Aeronian, Telychian and Sheinwoodian (base of Wenlock). Several research groups are currently undertaking studies specifically focused on candidate sections for these boundaries.

Immediately following STRATI 2015, the ISSS is planning a joint Aeronian-Telychian boundary GSSP working group field workshop in Prague. Tentative plans include an indoor session of talks and examination of research collections, visits to GSSP candidate and associated sections for the Base of Aeronian in the Prague region, followed by a trip to SW Spain to visit a candidate section for the Base of Telychian.

The Rhuddanian-Aeronian and Aeronian-Telychian Boundary Working Groups are discussing a proposal to implement a new, innovative approach to consideration of GSSP candidate sections and improving correlation among sections. It is proposed that as the data from each candidate section are assembled, all of the biostratigraphic, chemostratigraphic, and other data useful for correlation, will be assembled into a database (the Geobiodiversity Database), along with data from other sections, globally. These data will then be studied using quantitative correlation methods, such as CONOP9 and Horizon Annealing. These methods allow for simultaneous correlation of many sections using a range of different types of stratigraphic data, producing a high-resolution correlation between all sections. This approach permits integration of data from different fossil groups that only rarely co-occur, as well as chemo- and lithostratigraphic and radiometric data, thus permitting correlation between different facies and paleogeographic regions. They also permit quantitative assessment of the precision with which particular levels at any given section can be placed within the composite succession. We feel that this may be a good approach to find a GSSP level that can be correlated globally with the highest level of precision and confidence. Presentations outlining these methodologies for Silurian GSSP research were presented at the Kunming meeting and the 2014 annual meeting of the Geological Society of America by the ISSS Chair, Mike Melchin.

5. SUMMARY OF EXPENDITURES IN 2014

Income

Carried forward from 2013	US\$3,319
ICS Allocation	US\$4,500
Total	<u>US\$7,819</u>

Expenditures

Expenses for ISSS Chair, Vice-Chair and four other titular members to attend ISSS Field Meeting, Kunming, China	US\$6,100
Bank fees for ISSS account	US\$29
Total	US\$6,129
Balance	US\$1,690

In addition, ISSS received from ICS NSF funds (up to US\$6,600) for titular members to attend a field workshop in the Shennongjia District, western Hubei Province, China, in August, 2014, to study candidate sections for restudy of the GSSPs for the Base of Aeronian and Base of Telychian. Six titular members received this ICS-NSF funding to

participate in this field workshop. Final accounting of this fund is not yet complete but will be provided as soon as it becomes available.

6. BUDGET AND ICS COMPONENT FOR 2015

Contribution toward transportation, accommodation & registration of the Chair and Vice-Chair, to participate in the 5th International Symposium on the Silurian System in Quebec City, Canada US\$2,500

Contribution to assist other ISSS titular members to participate in the 5th International Symposium on the Silurian System in Quebec City, particularly those non-North American members who lack other travel funds US\$4,000

Contribution toward transportation, accommodation & registration of the Chair and Vice-Chair to attend STRATI 2015 in Graz, Austria US\$2,500

Financial support for GSSP working group members studying potential GSSP candidate sections for the base of Aeronian, Telychian and Wenlock US\$6,000

New award for an outstanding early career researcher in Silurian studies. To be presented at the ISSS meeting in Quebec City US\$300*

*This is a provisional estimate. The value of the award has not been finalized.

The ISSS has done pioneering work in the area of restudy of previously ratified GSSPs. Recent work has shown that many of the Silurian GSSPs, all of which were ratified in the mid-1980s, have serious deficiencies in terms of their potential use as benchmarks for high-resolution global correlation. Three working groups are currently focusing on restudy of the base of the Aeronian Stage (R-A boundary), base of the Telychian Stage (A-T boundary) and the base of the Wenlock Series. Future working groups will study the other GSSPs of Silurian System. The funds will be particularly directed at young members of the working group, and members who have no access to other funds for international travel to participate this ongoing research.

The ISSS will be submitting a separate proposal for funds to support the costs of the R-A and A-T Boundary Working Group workshop and field trips within Czech Republic and Spain to study the potential GSSP candidate sections there.

<u>Total proposed budget for 2015</u>	<u>US\$15,300</u>
<u>Balance forward from 2014</u>	<u>US\$1,690</u>

Total requested from ICS for 2015: US\$13,610

Potential funding sources outside IUGS

Most of the remaining costs of Working Group newsletter, meetings and other activities will be met by local support from host institutions and participation by individuals through national research grants and travel grants from their own authorities.

APPENDIX

7. CHIEF ACCOMPLISHMENTS OVER PAST FIVE YEARS (20010-2014)

Over the period of 2010-2014 the Subcommittee on Silurian Stratigraphy was active in several respects. The most recent of these activities are summarized above under the heading of “CHIEF ACCOMPLISHMENTS AND PRODUCTS IN 2014”. In addition to those, the following are the most significant accomplishments of the past five years.

The ISSS Website was moved to a more secure server in 2013 and also extensively redesigned by our webmaster, Junxuan Fan. The new web site can be found at: <http://silurian.stratigraphy.org/>.

A major Silurian meeting was held in Lund, Sweden, in June 2013, in association with IGCP 591, as well as the Ordovician and Cambrian subcommissions. The principal conference organizers were Mikael Calner and Oliver Lehnert. An excellent field trip visited localities in SE Sweden and the Oslo region of Norway. The proceedings of this conference were published as:

Lindskog, A. & Mehlqvist, K., 2013: Proceedings of the 3rd IGCP 591 Annual Meeting – Lund, Sweden, 9–19 June 2013. Lund University. 368 pp.

As noted above, another volume of papers emerging from the Lund meeting was published as a special issue of GFF in 2014.

Another recent publication focusing on Silurian research was:

Holloway, D.J. & Laurie, J.R., 2013. Siluro-Devonian Studies 2. *Memoirs of the Australasian Association of Palaeontologists* 44, 207 pp.

ISSS members organized or participated in 15 conferences related to IGCP 591. ISSS members were also leaders in the initial planning and co-leading of IGCP 591.

A proceedings volume from the 2009 Silurian Field Meeting, called “*Time and life in the Silurian: a multidisciplinary approach*”, which was held between 4-11 June 2009 in Sardinia, Italy was published in a special issue of *Bollettino of the Società Paleontologica Italiana* in 2010.

All three of the ISSS executive members participated in the ICS Workshop “The GSSP Concept”, in Prague, May 30-June 3, 2010. The ISSS chair made a brief presentation on the current state of understanding and some of the revisions and remaining problems associated with several of the Silurian GSSPs.

The International Symposium on the Silurian System “Siluria Revisited” took place July 9-15, 2011, in Ludlow, England. There were two days of oral presentations focusing on a wide range of Silurian topics and many of the presentations were also contributions to IGCP 591. Of particular significance were the pre- and post meeting field trips that toured the type areas for the Llandovery Series in Wales and the Wenlock and Ludlow series in England. These trips gave the opportunity to a new generation of Silurian researchers to view the GSSPs for all of the Llandovery, Wenlock and Ludlow series and stages (except the base of the Llandovery, which is in Scotland). This meeting resulted in the publication of a program and abstracts volume, a field guide, which includes many new observations and interpretations of the localities, including the GSSPs visited. This field guide is available for download at: <http://www.igcp591.org/books.php>. In addition, a conference volume of submitted papers, was published as a special issue of *Bulletin of*

Geosciences in 2012, edited by David Loydell.

The ISSS Chair has interacted with scientists at the British Geological Survey in the development of collaborative research between BGS scientists and members of the Silurian Subcommittee, particularly focusing on the restudy of the type areas for the GSSPs for the Silurian, all of which occur in the UK except for the base of the Pridoli. Such work is forming the basis of future refinement of the definition and correlation of the GSSP, particularly those in Wales and the Welsh borders, including the bases of Aeronian, Telychian, Wenlock (Sheinwoodian), Homerian, Ludlow (Gorstian), and Ludfordian. Each of these GSSPs can be shown to be in need of refinement or redefinition and these features were highlighted during the Siluria Revisited field trips. New research by the BGS has resulted in considerable refinement of the stratigraphic and structural framework for this region and this will form an important basis for future deliberations regarding the merits of these GSSPs and their possible need for reconsideration. As a result, a number of the BGS researchers were key participants and co-leaders of the Siluria Revisited field trips and made substantial contributions to the field guide for that trip. The results of some of the research in the type Llandovery area were recently published in: Jeremy R. Davies, Richard A. Waters, Stewart G. Molyneux, Mark Williams, Jan A. Zalasiewicz, Thijs R. A. Vandenbroucke and Jacques Verniers. 2012. A revised sedimentary and biostratigraphical architecture for the Type Llandovery area, Central Wales. Geological Magazine, Available on CJO doi:10.1017/S0016756812000337

As part of the ongoing efforts to resolve this problem of the GSSP for the Base of the Wenlock, the ISSS voting member Dr. Petr Štorch has been working with Chinese researchers on a Llandovery-Wenlock boundary section in Ziyang, China. Another complete and well-exposed Llandovery-Wenlock boundary section has recently found also in Ziyang where conodonts, graptolites and chitinozoans are found. Preliminary study shows a strong potential for regional and global correlation across the L-W boundary. Detailed paleontological, sedimentological and chemostratigraphical studies are being conducted. So, at current stage, there are still no strong candidates for a new GSSP for the Base of Wenlock. As noted above, new research on this problem is under way.

It was decided at the business meeting of the ISSS in Ludlow (2011) to strike a new stage boundary working group to restudy the base of the Aeronian Stage. This was decided after the field trip visit to the current GSSP and extensive discussion at the business meeting. Dr. Petr Štorch has agreed to lead this working group.

Five of the ISSS Titular Members, including the Chair and Vice-Chair, were co-authors on a paper published in *Lethaia* in 2011, outlining a proposed, informal subdivision of the Silurian time scale into stage slices. The paper also presented a generalized carbon isotope curve for the Silurian as well as an updated proposed correlation of the North American regional stages with the global standard scale.

The ISSS Chair, with several colleagues, prepared the chapter on the Silurian System for the 2012 edition of *The Geologic Time Scale*. This chapter is now published.

Publication of a special volume of *Proceedings of the Yorkshire Geological Society* honouring the lifetime contributions of Dr. Barrie Rickards, a well-known and respected Ordovician-Silurian graptolite paleontologist and stratigrapher was published in November, 2011. Invited papers focus on current research in graptolites, including contributions from Silurian graptolite researchers.

IGCP 591 held a special session at the International Geological Congress in Brisbane, Australia in August, 2012, co-organized by ISSS member Kathleen Histon and ISSS chair, Mike Melchin. IGCP 591 also held its annual meeting in July in Cincinnati, co-organized by ISSS members Carl Brett and Brad Cramer. Special symposium volumes were published from both conferences in refereed journals.

8. OBJECTIVES AND WORK PLAN FOR NEXT 4 YEARS (2015-2018)

In addition to the points listed above as “WORK PLAN, CRITICAL MILESTONES, ANTICIPATED RESULTS AND COMMUNICATIONS TO BE ACHIEVED NEXT YEAR”, many of which will extend into future years, the priorities (not in order of merit) proposed for the Silurian Subcommittee for the next four years include:

Research is currently under way by ISSS members, colleagues and students on the basis of Aeronian, Telychian and Sheinwoodian sections in UK, Czech Republic, Spain and China, as part of the process of selection of possible new GSSP sections. We hope to be in a position to vote on proposals for the Base of the Aeronian shortly after the Prague GSSP Field Workshop.

The research objectives for IGCP Project 591 are to investigate the biological, chemical and physical evolution of the ocean-atmosphere-biosphere system during this dynamic interval of Earth history by addressing in detail the relationships between climate, sea level, tectonics, biology, oceanography, volcanism, and the stratigraphic record of Early to Middle Paleozoic global planetary change. This project is being conducted in collaboration with the International Subcommissions on Ordovician, Silurian, and Devonian Stratigraphy (SOS, SSS, SDS), and will be accomplished over the five-year duration of the project (2011-2015).

IGCP 591 Annual Meeting, Quebec City, Canada, July, 2015 (see above)

IGCP 591 Closing Meeting, Ghent, Belgium, 2016. The ISSS will be a co-sponsor of this meeting.

Other future ISSS field meetings and GSSP workshops remain in the planning stages.

We are working on the development of databases that would bring together and make available information from all sources associated with the Silurian researchers. One such database has been created at the Nanjing Institute of Geology and Palaeontology by Dr. Junxuan Fan, who is also Webmaster for ISSS. This database, called Geobiodiversity Database (GBDB), is fully operational and has been named as the official database of the ICS.

9. ORGANIZATION

The ISSS is a Subcommittee of the Commission on Stratigraphy. The Subcommittee is organized by an Executive consisting of Chairman, Vice-Chairman and Secretary, who are all Voting Members of the Subcommittee. In the Subcommittee elected for 2012-2016 there are fifteen other Voting Members. The network of Corresponding Members has first of all a responsibility for communication in both directions between the Subcommittee and researchers on Silurian topics in their region. Secondly they represent a broad spectrum of specialized stratigraphical disciplines from those countries

or regions where Silurian rocks are extensively studied in relation to fundamental and/or applied geological research.

Current research activities and future plans are communicated through publication of an annual ISSS newsletter, *Silurian Times*, distributed by both email attachment and as a web release.

Websites: <http://silurian.stratigraphy.org/> contains newsletters, meeting announcements, discussion posting-boards, bibliography of Silurian articles, links to related sites, and other information.

Subcommission officers

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Vice Chairman: Peep Männik, Institute of Geology at Tallinn University of Technology Ehitajate tee 5, 19086 Tallinn, Estonia; peep.mannik@ttu.ee.

Secretary: Renbin Zhan, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing 210008, China, rbzhan@nigpas.ac.cn

List of Voting Members in 2014

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Working Task Groups

Base of Aeronian GSSP Restudy – Chair – Petr Štorch

Base of Telychian GSSP Restudy – Chair – Michael Melchin

Base of Wenlock GSSP Restudy – Chair – David Loydell

Interfaces with other International projects

Collaboration on IGCP Project 591, “The Early to Middle Paleozoic Revolution”, which was approved and began its work in 2011.

REPORTS OF ACTIVITIES IN 2014

1. The 4th Annual Meeting of IGCP 591 in Tartu 2014 jointly with ISSS

by Tõnu MEIDLA and Leho AINSAAR

The IGCP Project 591: Early to Middle Palaeozoic Revolution that was formally started in 2011 held the 4th annual meeting in Tartu, Estonia in June 10-19 2014.

The meeting took place in the historical hanseatic town Tartu, the second—large town of Estonia. The meeting was attended by 107 participants from 23 countries. The meeting was divided into three parts. The pre-conference field trip started from Tallinn in June 10 and took people to the key sections of the Ordovician. This excursion was followed by the scientific sessions. The post-conference excursion visited the Silurian sections in the Island of Saaremaa and in mainland Estonia; it departed from Tartu in June 16 and terminated in Tallinn in June 19.



Participants of the 4th Annual Conference of the IGCP 591 in front of the Citrina Laboratory Building where the scientific sessions were held.

The pre-conference excursion started in Tallinn on June 10th and took participants to the Ordovician sections. The group visited the Pakerort Cliff on the Pakri Peninsula where the topmost second series of the Cambrian System and the topmost Furongian, were overlain by the Lower Ordovician. The next stops introduced the Lower to Middle Ordovician transition (the nearby Uuga Cliff), to the Upper Ordovician reef and flank facies limestones (The Vasalemma Quarry), and to richly fossiliferous Upper Ordovician limestones with a K-bentonite (The Ristna Cliff). The second day was started with an Upper Ordovician limestone section south of Tallinn (the Sutlema Quarry) and then to the east – to the Middle and Upper Ordovician open shelf limestones (Väo Quarry, Aluverre Quarry). The lunch stop was organized in the Arbavere Field Station of Geological Survey of Estonia where also a number a core sections was exposed. Between the dinner and night in the Saka Cliff Spa hotel, people took a walk along the coastline of the Baltic Sea, looking at the Cambrian-Ordovician transition in nearby sections. The Third day brought us to the Põhja-Kiviõli kukersite open-pit mine, the Kohtla underground mining museum and to the lowermost Hirnantian (the Porkuni Quarry). The excursion approached Tartu in the afternoon. In evening, people met for a welcoming party in the Art Museum of the University of Tartu.

The scientific sessions in Tartu took place on June 13-15th. The conference sessions

were held in the new building of the Estonian Biocentre. 60 talks were given and 35 poster presentations offered during the poster session. The talks and posters summarized recent advances in early to middle Palaeozoic geology, palaeontology, geochemistry, biogeography and palaeoecology. Three keynote lectures were offered. David Siveter presented an overview of the extraordinary soft-bodied fossils from the Silurian Herefordshire Lagerstätte. Brad Cramer with co-authors discussed the possibilities of resolving the stratigraphic record at the timescales comparable to changes in the ocean-atmosphere-biosphere system. Axel Munnecke offered a summary of recent developments in the field of Early Palaeozoic environments, considering oceanic circulation, latitudinal temperature gradients, migrating climatic belts and changes in atmospheric composition. The organizers thank all contributors and are particularly grateful to the keynote speakers.

The conference dinner took place on June 14th in a private hall of the Dorpat Conference Centre.



Participants of the Silurian (post-conference) excursion at Kaali. The Kaali Lake, a Holocene impact structure, is visible in the background.

The post-conference excursion to the Silurian sections departed from Tartu on June 16th. The first stops were made at the Llandoveryian algal *Lagerstätte* (the Kalana Quarry) and the Llandoveryian *Borealis* limestone deposit (the Eivere Quarry). In the afternoon, the group took a ferry to the Saaremaa Island where we spent three nights. A short sightseeing stop was made in the historical Koguva Village before lodging in Kuressaare. The second day took people to the sections of lower to middle Wenlock (the Pulli Cliff with reefs, the Panga Cliff with its magnificent view, the shoal and lagoonal units in the sections of Abula Cliff and grainstones of the Suuriku and Undva Cliffs), with an intermediate sightseeing stop in the Angla Windmill Park and the Heritage Culture Centre. The third day offered a succession of limestones and dolomites in the interval of topmost Wenlock to Pridoli (the Soeginina, Kaugatuma and Ohesaare cliffs), with an intermediate short stop at the Lümända lime kilns. The programme of this day terminated with a visit to the Historical Museum in the ancient Kuressaare Castle. The

last day comprised a slow return to Tallinn and the airport. People looked at the Ludlovian lagoonal dolomites in the Kaarma Quarry, the Kaali meteorite crater and museum. After the short ferry trip, a late lunch stop was made in the P äri Quarry (upper Llandovery).

The meeting was hosted by the Department of Geology of the University of Tartu and organized in cooperation with the Institute of Geology at Tallinn University of Technology.

The conferences volume prepared for the 4th annual meeting in Estonia could be downloaded from <http://www.igcp591.org/books.php>.

The organizing committee acknowledges financial support from the IGCP591 Project, the University of Tartu, the Estonian Environmental Investment Centre, the Tallinn University of Technology and the Estonian Geological Survey.

2. IGCP 591 Field Workshop in Kunming jointly with ISSS, ISOS and ISCS by ZHAN Renbin and HUANG Bing

Co-organized by the Nanjing Institute of Geology and Palaeontology (Chinese Academy of Sciences) and Yunnan Key Laboratory of Palaeobiology (Yunnan University), the IGCP Project 591 Field Workshop was held on the campus of Yunnan University during August 12~21, 2014. The meeting is also in conjunction with the International Subcommission on Cambrian Stratigraphy (ISCS), the International Subcommission on Ordovician Stratigraphy (ISCS) and the International Subcommission on Silurian Stratigraphy (ISSS) as their annual meetings respectively. The theme of the meeting is "the Early-Middle Paleozoic Events and their relationship".



Group photo of all delegates in front of the Science Hall of the Yunnan University

The meeting has 111 registered delegates from 17 different countries, amongst which 43 are from outside China and 35 are graduate students. At the opening ceremony, the vice president of Yunnan University Prof. Zhang Keqin, the director of the Nanjing Institute of Geology and Palaeontology Prof. Yang Qun, the representative of National Natural Science Foundation of China Dr. Liu Yu, the vice chair of International Commission on Stratigraphy Prof. Peng Shanchi, the representative of the IGCP Academic Committee

(UNESCO) Prof. Jin Xiaochi, and the senior leader of IGCP Project 591 Dr. Brad Cramer gave speeches respectively. During the two-day academic sessions, all delegates exchanged their latest research achievements, ideas, and new technologies in the Science Hall of Yunnan University, discussed the future development of those commonly interested areas, and worked out possible collaborations on the Early-Middle Paleozoic geologic and biologic events and their relationships in the coming years. At the closing ceremony of the meeting, on behalf of the organizing committee, Dr. Brad Cramer announced some awards established by the organizer. They are the best student oral presentation (Liang Yan from China and Lukas Laibl from Czech Republic) and the best student poster presentation (Jing Yuxuan from China). Besides the indoor academic sessions, a middle-conference field excursion and a six-day post-conference field excursion were organized respectively. All delegates took part in the mid-conference excursion to visit the original site of the early Cambrian Chengjiang Biota, and about 60 delegates were following the post-conference excursion to northeastern and western Yunnan Province visiting the Lower Paleozoic geological sections and various fossil sites of South China, Indo-China and Sibumasu paleoplates respectively, as well as several famous scenery spots.

The two-day indoor meeting includes 8 specific sessions, altogether 42 oral presentations amongst which three are invited plenary speeches. They were given by Prof. Loren Babcock (USA), chair of ISCS, Prof. David Harper (UK), chair of ISOS, and Prof. Mike Melchin (Canada), chair of ISSS. One of the outstanding characters of this meeting is that more than 50% of the talks were give by graduate students and young researchers indicating a promising future for the international Lower Paleozoic research. Most of the talks are covering the latest achievements of the regional and international Cambrian, Ordovician and Silurian studies, such as stratigraphy, paleobiology, macroevolutionary events and their dynamics. Fossil Lagerstätten and GSSPs (particularly high resolution stratigraphy) are two hot topics of many talks and during the meeting. Besides, thirty five posters have also been arranged outside the meeting hall and provided many interesting topics for free communications during the coffee breaks of the meeting.



The Science Hall of Yunnan University

The formal publications of the meeting include: an Extended Summary volume including 66 short papers had been published by Nanjing University Press (Nanjing) in July 2014, a Field Guide has been published by Science Press (Beijing) just before the meeting, and a conference proceedings volume is being edited and will be published as a normal issue in *Palaeoworld*, a SCI journal published by Elsevier.

Financial supports for this meeting come from various sources: the State Key Laboratory of Palaeobiology and Stratigraphy, the National Natural Science Foundation of China, the IGCP Project 591, the Yunnan Key Laboratory on Palaeobiology (Yunnan University), and the Leica Kunming Company. The organizers would like to express our sincere thanks to all these institutions and relevant persons.



The Field Station of Chengjiang Biota at Maotianshan Mountain, Chengjiang, eastern Yunnan



Collecting the Chengjiang Biota in Haikou County, eastern Yunnan Province, SW China

3. Notes of the Business Meeting of ISSS in 2014 (by ZHAN Renbin)

Time and date: 1:00pm~2:00pm, August 15, 2014

Place: Science Hall of Yunnan University, Kunming China

Chair: Prof. Mike Melchin (Canada)

Attendees: 29 Silurian workers and experts including 9 titular members of ISSS (Anna Antoshkina, Carlton Brett, David Holloway, Peep Männik, Mike Melchin, Petr Štorch, Jacques Verniers, Yi Wang, Renbin Zhan)

The roughly 1-hour business meeting was chaired by Prof. Mike Melchin (chair of ISSS) and includes 6 major topics in the agenda.

Firstly, some details about the upcoming Fifth Silurian Symposium to be held in Quebec City (Canada) next July were discussed. It will be organized by Prof. Mike Melchin and his Canadian colleagues. The First Circular of this meeting had already been distributed since May this year. The academic sessions will be between 8~10 July 2015 attached by a pre-conference field excursion (July 4~7) in Ontario Canada and a post-conference field excursion (July 11~17) to Anticosti Island in the Saint Lawrence Bay, Quebec.

Secondly, some suggestions on the proposed field meetings are also discussed. A field meeting in the Prague Basin will be arranged particularly on the purpose of the restudy on the Aeronian GSSP in August 2015. It will be organized by Dr. Petr Štorch and his team. Another field meeting, jointly with IGCP 591, ISCS and ISOS, in Ghent Germany is also favored by all attendees. It will be in July 2016. Thijs Vandenbrouker, Brad Cramer and their team will be the organizers.

Thirdly, reports on the restudies on some Silurian GSSPs have discussed one by one. Concerning the base of Wenlock, Petr Štorch reported that the Ziyang section (South China paleoplate) has some potential and some relevant investigations are being conducted particularly on graptolites, conodonts, chitinozoans, sedimentology and chemostratigraphy by Wang Jian, his Chinese team and some relevant foreign experts. He also mentioned that there is a very good section in Arctic Canada that needs further detailed study. Peep Männik mentioned that the Gotland section across the Wenlock boundary could be the best in terms of conodonts. Some bentonite beds are also well-developed and exposed there. The Wenlock boundary section in Gaspé Canada is very good in graptolites according to Brad Cramer's introduction. One common point reached from the discussion is that the section for this boundary should have correlation potential in both graptolites and conodonts.

Concerning the Aeronian GSSP, there are three candidate sections proposed by attendees at the business meeting: the England section (David Loydell and Thijs Vandenbrouke are leading the research group), the Shennongjia section (Mike Melchin, Fan Junxuan and their team are investigating), and the section in the Prague Basin (Petr Štorch and his team have been studying it for several years). Besides, potential sections are also in Spain, Arctic Canada and Gobi Altai. Advantages and disadvantages of each section are discussed respectively, and further investigations are encouraged. A working group led by Petr Štorch will assess these candidate sections and make a final report to ISSS in a couple of years.

Concerning the Telychian GSSP, a new working group is proposed at the business meeting that will be led by Mike Melchin. Carl Brett, Fan Junxuan, and Jacques Verniers are the group members at the current stage. Any other interested experts are welcome to join into this particular working group. Currently there are two candidate

sections for this particular boundary: the Shennongjia section and the Spain section. Further reports will be out in a couple of years.

Fourthly, as suggested by Zhan Renbin at the last ISSS business meeting in Lund in June 2013, the ISSS discussed again the "Silurian Award" for young scientists. A three-person nominating committee has been formally established: Carl Brett, Zhan Renbin and Petr Štorch. A detailed proposal about this award will be distributed among titular members of ISSS for further discussion.

Fifthly, Prof. Mike Melchin suggested some discussion about the officers and titular members of ISSS for the period of 2016~2020 because he has been finishing his second term as the Chair of ISSS. Most of the attendees suggested to think about this problem and to establish a nominating committee at the Fifth Silurian Symposium in Quebec City next July.

Sixthly, Prof. Mike Melchin asked all titular members of ISSS to nominate new corresponding members for our subcommission. Some young Silurian experts are nominated at the meeting: Chen Qing (China), Rose Maclain (Australia), Stepan Manda (Czech Republic), Nike Solevan (US), and Wang Wenhui (China). All other nominations are welcome at any time and should be sent to any of the officers of ISSS.

Finally, on behalf of ISSS, Prof. Mike Melchin expressed our sincere thanks to ICS and Prof. Stan Finney for their strong support for our restudy on those problematic Silurian GSSPs, and to the organizers of the Kunming meeting for making such a successful and wonderful academic gathering.

THE ISSS AWARD: KOREN' AWARD

1. Guidelines for the ISSS Award: Koren' Award

Description: This award is intended to recognize and encourage excellence in research related to Silurian stratigraphy and paleontology by younger researchers. It will be presented every four years at the Silurian Symposium.

It is proposed that this award be formally termed the "Koren' Award" in honor of the late Dr. Tatiana Koren' (1936-2010), former Secretary and Vice Chair of the Silurian Subcommittee (as well as member of Ordovician and Devonian subcommittees) and a global expert on graptolites who made many lasting contributions to the biostratigraphy of the Silurian System (see Memorial in 2011 in *Silurian Times* (No. 18) and *Ordovician News* (No. 28)).

Selection Procedure: Recipient of this award will be based on nominations from voting (titular) members of the Silurian Subcommittee overseen by a committee of three titular members. The nomination will consist of an updated CV, including list of publications relevant to Silurian stratigraphy and letter or letters of recommendation from one or two or several voting members of ISSS. Letters should emphasize the fit of the nominee for the criteria listed below.

The nominations will be reviewed by the committee on awards (presently Carl Brett, Renbin Zhan and Petr Štorch) who will prepare a slate of candidates including brief synoptic biographies that will be voted upon by all titular members. The candidate receiving the largest number of votes will receive the award.

Criteria for selection: The candidate may be chosen from among any paleontologists/stratigraphers who fit the following criteria:

A successful candidate should:

- 1) be 40 years of age or younger.
- 2) possess a graduate degree (ideally Ph.D, although candidates with masters degrees may be considered).
- 3) have completed at least five years of professional research (Ph.D studies included).
- 4) have a substantial record of publication (mostly senior authored) related to Silurian stratigraphy, paleontology, paleobiology, paleobiogeography or paleoceanography, etc. in peer-reviewed journals.
- 5) be actively contributing to Silurian research at the time of the award.
- 6) demonstrate an outstanding ability to communicate ideas verbally (as in conference talks) and in writing.
- 7) be supported by two or more titular members of the Silurian Subcommittee.

Besides, the ISSS will avoid awarding two continuous recipients from the same country or state in 8 years.

Certificate and bonus: Each winner of the "Koren' Award" will received a formal Certificate issued by ISSS with the Chair's signature and \$300US as bonus, both of

which will be awarded at the closing ceremony of each Silurian Symposium every four years.

2. Call for Nomination of the First ISSS Award: Koren' Award

- 1) All titular members of ISSS are invited to nominate candidates for "Koren' Award" to be awarded at the Quebec City meeting in July 2015.
- 2) Each nominee should have recommendation letters from at least two Titular Members of ISSS.
- 3) All nominations are supposed to be sent to the Secretary of ISSS or one of the members of the Nomination Committee (currently Carl Brett, Renbin Zhan and Petr Štorch) by the **end of April, 2015**.

Second Circular

**International Geoscience Programme
Project 591**

5th Annual Meeting

Jointly with

**International Subcommission on Silurian
Stratigraphy (ISSS)**

**5th International Symposium on the
Silurian System**

**July 3-20, 2015, Quebec
City, Canada**

Organized by the INRS-ETE and the Department of Earth and Environmental
Sciences at the University of Ottawa



INRS

Université d'avant-garde



uOttawa



General information

The Fifth Annual Meeting of IGCP 591 will be hosted by the Institut national de la recherche scientifique (INRS-ETE) in Quebec City, Canada. The meeting will be held jointly with the 5th International Symposium on the Silurian System and will form an excellent platform for scientific discussions. The aims of the joint IGCP 591 – ISSS meeting are to investigate the dynamic and important Early–Mid Paleozoic history and evolution of life and our planet and to improve our understanding of the definition, correlation and resolution of that time interval. Contributions on relevant topics (ocean biogeochemistry, sea-level change, biodiversity changes, paleoecology, biostratigraphy...) are welcome.

The meeting includes three days of scientific sessions on the modern campus of the INRS located in the new Quebec City downtown close to hotels, bars, restaurants and public transportation. We are also planning a mid-conference excursion to the Ordovician carbonate and siliciclastic successions of the St. Lawrence Lowlands near Quebec City. The scientific sessions will be preceded and followed by geological excursions in the Gaspé Peninsula and Anticosti Island respectively. Publications related to the meeting will include the abstract proceedings and field guidebooks; a thematic conference volume of papers will be published in the *Canadian Journal of Earth Science* is planned (see below).

Organization and scientific committee

André Desrochers (Chair), University of Ottawa, Ontario
Aïcha Achab (vice-chair), INRS- ETE, Quebec
Mike Melchin (ISSS), St. Francis Xavier University, Nova Scotia
Jisuo Jin, Western University, Ontario
Denis Lavoie, Geological Survey of Canada, Québec
Michel Malo, INRS-ETE, Québec

Schedule

- July 3-7, 2015 – Pre-conference excursion to the Ordovician and Silurian of the Gaspé Peninsula.
- July 7, 2015 – Registration and ice-breaker starts at 18:00 on the INRS-ETE campus.
- July 8, 2015 – Scientific sessions and poster exhibitions between 09:00 and 17:00 at the INRS-ETE.
- July 9, 2015 – Mid-conference excursion to the classical Ordovician localities south of Québec City.
- July 10, 2015 – Scientific sessions and poster exhibitions between 09:00 and 17:00 at the INRS-ETE.
- July 10, 2015 – Conference Banquet.

July 11, 2015 – Scientific sessions and poster exhibitions between 09:00 and 15:00 at the INRS-ETE

July 11, 2015 – Group meetings IGCP/ISSS (15:00-17:00).

July 12-20, 2015 – Post-conference excursion to the Ordovician and Silurian of the Anticosti Island.

Pre-conference Excursion: The Lower Paleozoic rocks of eastern Quebec of the Gaspé Peninsula (Field trip leaders: Denis Lavoie, Geological Survey of Canada and Michel Malo, INRS-ETE)

The Paleozoic succession in eastern Quebec consists of Cambrian-Upper Ordovician deep marine passive margin to foreland continental slope deposits. After the Middle-Late Ordovician Taconian Orogeny, sedimentation during the Early Silurian to Early Devonian was dominated by clastic deposits with, however, two major shallow marine carbonate successions rich in cryptomicrobial and metazoan fauna and local reefs coeval with prominent positive isotopic carbon excursions (the Ireviken and Lau events) are recognized.

The excursion will allow observing the various types of faunal-rich, platform-derived limestone conglomerates that are used to correlate the thick fine-grained dominated Cambrian-Upper Ordovician deep-water succession. The Silurian carbonate facies will be a highlight of the trip with exquisite examples of diverse cryptomicrobial constructions as well as deep stromatactis-rich mud mounds and fringing reefs. The fieldtrip will include a visit to the Museum of Miguasha Park, a world heritage UNESCO site with its spectacular collection of Upper Devonian fishes.

Note that the pre-conference excursion is limited to 15 persons. Registration will open on the website on March 7 and will be on a first come first served basis. The deadline to transfer the costs of the trip, together with the registration fee, is April 30, 2015. Registration is estimated at C\$800/person for professionals and C\$700/person for graduate students; more details in the third (final) circular and on the meeting website. Registration includes transportation from Quebec City, field guidebook, accommodation, all meals but diners.

Mid-conference Excursion: The Upper Ordovician Taconic foreland succession near Quebec City (Field trip leader: Denis Lavoie, Geological Survey of Canada)

In eastern North America, the Late Ordovician was a time of marked changes in both the tectonic setting and in paleo-oceanographic conditions at the margin of Laurentia. The rapidly foundering, warm-water to ultimately cool-water-like carbonate ramp was succeeded by organic-rich black shales and overlying flysch. The excursion will examine the rapid facies, faunal and geochemical evolution from warm-water to cool-water-like carbonate facies as well as examining the transition from the carbonate ramp to a deep fine-grained clastic succession.

Note that the conference excursion is included in your conference registration fees and will accommodate up to 80 participants. The cost of this mid-conference excursion is included in the registration fees that have to be paid by April 30, 2015. Registration includes bus transportation from Quebec City, field guidebook, and lunch.

Post-conference excursion: The Upper Ordovician and Lower Silurian carbonate succession of Anticosti Island, Quebec. (Field trip leaders: André Desrochers, University of Ottawa, and Jisuo Jin, University of Western)

The Upper Ordovician–Lower Silurian strata exposed on Anticosti Island consist of an exceptionally thick succession of undeformed, richly fossiliferous carbonate succession, with minor siliciclastic intervals, deposited on a storm-dominated tropical ramp. The uppermost Ordovician Ellis Bay Formation coincides with one of the three major Phanerozoic glaciations and one of the major Phanerozoic mass extinctions. Relative to the Hirnantian ice-sheet center, the Anticosti succession provides a superb far-field stratigraphic and biodiversity record in a tropical carbonate depositional environment.

By integrating sequence sedimentology with species-based biostratigraphic packages and carbon isotopic profiles, we are now able to produce stratigraphic models resolving events spanning a few hundred thousand years. It is now possible to analyze the Anticosti succession with a set of standard tools or sedimentary proxies, but integrated into the modern approach of stratigraphical cyclicity and sequence stratigraphic analysis. The field trip will cover all key O/S units exposed on Anticosti from the basin edge to the axis of active sedimentary depocentre. In addition, we will examine the initial full post-extinction faunal recovery, represented by the rich and diverse Early Silurian fauna.

Note that the post-conference excursion is limited to 24 persons. Registration will open on the website on March 7 and will be on a first come first served basis. The deadline to transfer the costs of the trip, together with the registration fee, is April 30, 2015. Registration estimated at C\$1800/person for professionals and C\$1600/person for graduate students; more details in the third (final) circular and on the meeting website. Registration includes charter plane between Quebec City and Anticosti Island, island transportation, field guidebook, accommodation, and all meals.

Registration fee and payment

The registration fees for the scientific sessions and the mid-conference excursion are estimated at C\$300/person for professionals and C\$250/person for graduate students; more details in the third (final) circular and on the meeting website. Registration fees will significantly increase after April 30. Registration covers the scientific sessions, the abstract volume, icebreaker reception, conference banquet, and coffee breaks. It will be possible to pay online by Visa/Master cards; more details in the third (final) circular and on the meeting website.

Icebreaker and registration

The registration and icebreaker will take place in the main entrance of the INRS- ETE Complex (490, rue de la Couronne, Québec) on Tuesday July 7, starting at 18:00. At this time, you can register, pick up your badge and conference package (including abstract volume), mount your poster, or upload your PowerPoint presentation. Beverages and snacks will be served. The registration desk will also be open on Wednesday July 8 from 08:00 to 10:00.

Activities for accompanying persons

Please note that such activities will be only arranged for July 8-11 during the conference (details to come in the final (third) circular

Abstract submission

Starting March 7, 2015, please submit your abstract in Word or PDF formats no later than April 30, 2015. The file should be named after the first author's surname followed by underscore and

'oral' or 'poster' (e.g. Melchin_poster.doc or Jin_oral.pdf). The abstract should be no longer than 2 printed, single-spaced pages, including references and figures. One high-resolution, grey-scale line drawing or high-contrast black-and-white photograph can be included. The abstracts will be published as a meeting proceeding and distributed at the meeting. All questions regarding conference abstracts should be directed to Mike Melchin (mmelchin@stfx.ca) or Jisuo Jin (jjin@uwo.ca).

Thematic Special Issue in Canadian Journal of Earth Sciences (CJES)

Submission to the CJES Special Issue will open shortly after the conference. CJES is widely distributed worldwide, and features ScholarOne online manuscript submission and review system. The paper length should not exceed six printed pages. Jisuo Jin and Mike Melchin will be the guest editors of the CJES Special Issue. Deadline for submission of manuscripts is August 31, 2015. All questions regarding papers to CJES should be directed to Melchin (mmelchin@stfx.ca) or Jisuo Jin (jjin@uwo.ca).

Oral and poster presentations

Oral presentations are limited to **12** minutes plus **3** minutes for questions. PowerPoint presentations (ppt or pdf format) will be shown on 3x3 m screen with high definition laser canon. Posters will be displayed throughout the entire meeting immediately next to the scientific sessions lecture. More details in the final (third) circular.

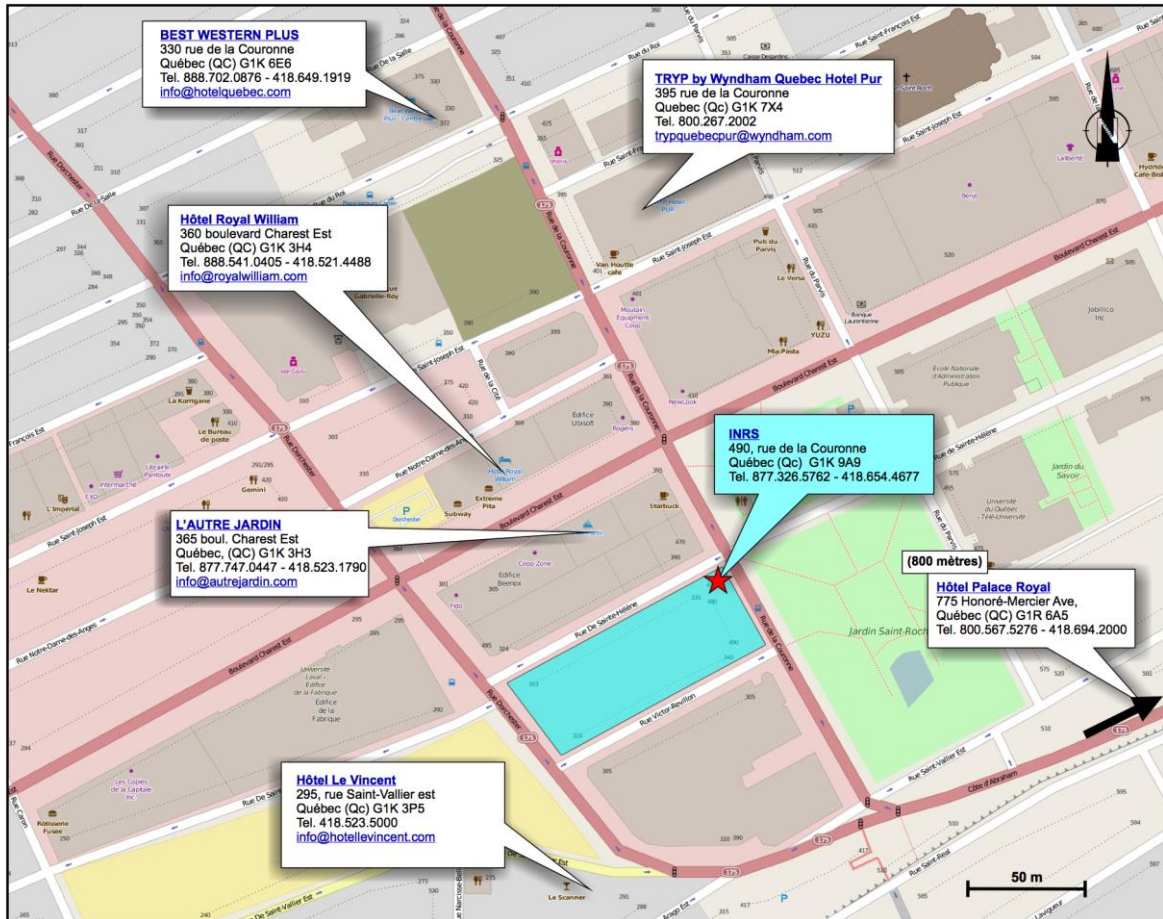
Travel to Quebec City

The Quebec City Airport is an international airport with numerous daily flight connections from the major Montreal and Toronto International Airports. Participants will be required to arrange their travel on their own.

Hotels

You must book your accommodation yourself. For your convenience, a selection of pre-booked rooms in hotels of different price range near the INRS-ETE campus, but of course there are several other hotels that you can choose to book from online hotel reservation systems (such as Trivago or Vacances Québec). Check in the final (third) circular.

Very important! You must reserve in advance your hotel because the Quebec City Summer festival, a major international cultural event, is starting July 9.



Contact information for the IGCP 591 annual meeting 2015/ISSS symposium

General questions about the meeting, scientific sessions or related to IGCP 591 should be directed to the Meeting Chair André Desrochers (andre.desrochers@uottawa.ca).

Welcome to Quebec City in July 2015!

On behalf of the organizing committee,
Andrit Desrochers and Aicha Achab

Please check the IGCP 591 website for information of the project and updates
<http://www.igcp591.org/>

Important dates and deadlines:
 3rd (final) circular: **March 7th, 2015**
 Registration Payment: **April 30th, 2015**
 Abstract Submission: **April 30th, 2015**
 Article Submission: **August 31st, 2015**



INTERNATIONAL
COMMISSION
ON
STRATIGRAPHY



ISSS GSSP Workshop – Prague 2015

GSSPs of the Silurian stages revisited

Prague, Czech Republic

30–31 July 2015

Invitation

The Organizing Committee cordially invites titular and corresponding members of the International Subcommittee on Silurian Stratigraphy (ISSS) and additional members of the stratigraphic community interested in current agenda and research devoted to restudy of the GSSPs of some Silurian stages and series, to the ISSS GSSP Workshop 2015. A one-day indoor session of the working group will be held at the Geological Institute of the Czech Academy of Sciences in Prague 6, Lysolaje. A field trip scheduled for the second day will bring participants to important reference sections – potential candidates for the Aeronian and Homerian GSSPs – situated near Prague.

Sponsored by:

Institute of Geology of the Czech Academy of Sciences; Czech Geological Survey

International Subcommittee on Silurian Stratigraphy; Czech National Geological
Committee

Organizing Committee:

Petr Štorch (Inst. of Geology, Academy of Sciences of the Czech Republic, Prague)

Michael J. Melchin (International Subcommission on Silurian Stratigraphy)

Štěpán Manda (Czech Geological Survey, Prague)

Zuzana Tásáryová (Czech Geological Survey, Prague)

Objectives:

The primary focus of the ISSS GSSP Workshop in Prague is on candidate sections for Aeronian and (prospective) Homeric GSSPs. Current progress in multi-proxy studies on Rhuddanian-Aeronian boundary section in Hlásná Třebaň will be presented. Fossil material from the section will be available for study and discussion along with some graptolite type specimens from Barrandian area borrowed from Czech museums. International participants are encouraged to give presentations on current progress achieved in other candidate sections and other boundaries within the Silurian. Both Hlásná Třebaň section and Sheinwoodian-Homeric boundary section in Kosov Quarry will be visited by subsequent excursion.

Format of Workshop:

No abstracts will be submitted and no publications will be produced directly from the workshop. The format will be open discussion of all participants searching for new Silurian GSSPs, particularly focused on Rhuddanian-Aeronian and also Sheinwoodian-Homeric boundary sections. We will recruit specific presentations that lead or open discussions, and we will consider requests of participants to make specific presentations on closely related topics.

Venue:

Lecture room at the Institute of Geology , CAS, Rozvojová 269, Praha 6.

Key dates:

March 31, 2014	Second (and final) circular
April 30, 2014	Deadline for registration
April 30, 2014	Deadline for submission of the application to ISSS for financial support
May 25, 2014	Deadline for payments
July 29, 2014	Indoor business meeting and presentations, workshop dinner
<i>July 30, 2014</i>	Field trip to sections relevant to restudy of Silurian GSSPs

Program:

- 29 July 8.00–9.45 Registration at the Institute of Geology in Prague 6, Lysolaje.
10.00 Opening and introduction talk
10.15–12.00 Scientific session – recent progress in the restudy of GSSPs with particular reference to Aeronian, Telychian and Homerian. Presentations .
14.00–15.00 Scientific session – presentations and business meeting summary.
15.15–18.15 Study of the fossil material from Czech candidate sections (relevant type specimens can be borrowed from Czech museums upon preliminary request).
19.30 Workshop Dinner near Prague Castle
- 30 July 9.00–18.00 Field Excursion (base Aeronian at Hlásná Třebaň section, base Homerian, Mulde and Lundgreni Event and Lau-Kozlowskii Event in Kosov Quarry, and classical Barrande’s locality of the lower Telychian graptolites at Litohlavy).

Registration and fee:

Registration fee will be kept low, covering costs of Workshop Dinner, public transport in Prague, workshop materials, and one day field excursion. Accommodation will be paid separately.

Registration due by April 30, 2015.

Lodging:

Nearby hotels in Prague 6 Suchdol and Lysolaje, ranging from **50 USD to 130 USD** per night.

Transportation:

Prague Airport is offering direct flights from 108 destinations in 50 countries. For those returning from STRATI 2015 in Graz to Vienna, both coach, train, and airplane connections are operated between Vienna and Prague. Transfer from PRG airport involves taxi, shuttle minivans or buses. Visitors can take advantage of the dense network of public transport based on trams and underground (metro).

Second circular:

Second circular with registration form will be distributed in March 2015.

Participants will be encouraged to register and pay the fee as soon as possible since the number of the workshop participant is limited to 25.

Upcoming Silurian Theme Session/Field Trip, April 2016

Theme Session: Silurian Sequence Stratigraphy and Paleontology

Field Trip: New Information on the Sequence-, Chemo- and Biostratigraphy of the Silurian in the Western Great Lakes Region

Organizers: Don Mikulic and Joanne Kluessendorf

A theme session highlighting general Silurian sequence stratigraphy and paleontology and a field trip focusing on new information concerning the Silurian of the western Great Lakes area are scheduled for the Geological Society of America North-Central meeting at the University of Illinois at Urbana-Champaign, 18-19 April 2016.

The session is open to papers on Silurian, late Ordovician and early Devonian subjects, and may include topics such as sequence stratigraphy, paleontology, chemostratigraphy, and biostratigraphy. Geographic area is not limited to the Great Lakes region.



The field trip will focus on the Chicago region, which has played a prominent role in classic Silurian studies since the mid-nineteenth century. These are the rocks that James Hall used to correlate his newly-erected New York System and where he identified the first fossil reef in North America. Since then, the area's reef and *Konservat Lagerstätten* biotas have figured notably in determining the true biotic diversity and paleoecology of the Silurian. In recent decades, the development of deep quarry exposures and extensive subsurface information has provided unprecedented opportunity to refine the sequence-, chemo-, and biostratigraphy of these important Silurian strata. Identification of Llandovery through Pridoli strata has revealed new information about the depositional history of regional basins, carbonate platforms and reef architecture, as well as relationships with Ordovician and Devonian strata.

Contact:

Dr. Donald G. Mikulic (Senior Paleontologist)
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Russian Academy of Sciences
Institute of Geology, Komi Science Center, Ural Branch
Scientific Committee on problems of Lithology and Sedimentary Mineral
Resources: Lithology and Geochemistry of Carbonate Deposits Division
The National Committee of Reef Research

All-Russia Lithological Symposium
with international participation
GEOLOGY OF REEFS

Syktyvkar, Republic of Komi, Russia
June 15-17, 2015

**Science session:**

- Lithofacies diagnostics of organic buildups
- Paleoecological analysis of reef ecosystems
- Geochemical aspects of reefs and reef-like fabrics
- Microbial carbonates and bacterial lithogenesis
- A complex analysis of areas with reef formations

Field trips:

Pre-symposium: 11–14 June. Upper Devonian reefs and Domanic facies of the South Timan
(previous cost 300 \$).

Abstracts:

Submit your abstract in Word-format (Microsoft Word 97/2000/XP *.doc). The file should be named after the first author's surname followed by underscore and specification - 'text', 'table' or 'figures' (e.g. Ahlberg_text.doc). It should not exceed four page A4, including summary, table, figures and references.

Manuscripts are accepted in English. The abstract should be written according to the next style. the padding edge of the page — 2,5 cm. Font – 12 pt, Time new roman. Citations are given in the form of number of reference at the straight brackets (e.g., [1]). The references given at the end of the text, font size 10 pt

Figures must be saved separate to text. Please do not embed figures in the manuscript file. Files should be saved as one of the following formats: TIFF (tagged image file format), JPG . Please provide the highest quality figure format possible (e.g. 300 dpi). All figures must be numbered in the order in which they appear in the manuscript (e.g. Figure 1, Figure 2). In multi-part figures, each part should be labelled (e.g. Figure 1(a), Figure 1(b)). Figure captions must be saved separately, as part of the file containing the complete text of the manuscript, and numbered correspondingly. The filename for a graphic should be descriptive of the graphic, e.g. Figure1, Figure2a.

Oral and poster presentations

Oral presentations are limited to 12 minutes plus 3 minutes for questions. PowerPoint presentations (ppt, pptx or pdf format) will be shown on 3X3 m screen.

Posters will be displayed throughout the entire meeting immediately next to the scientific sessions lecture hall. Size of posters should be A0.

Official website: <http://conf.uran.ru/Default.aspx?cid=reefs>.

Deadlines:

Registration	February 28, 2015
Abstract submission:	March 1, 2015
Cost of field work	April 1, 2015
Third circular with program:	May 15, 2010
Registration of the participants of the meeting:	July 14, 2015
Meeting opening:	July 15, 2015

Registration fee– 50 \$

Accommodation– 60–100 \$ per person/ per night in the hotels.

The medium cost of meals in Syktyvkar is 10–30 \$ per day.

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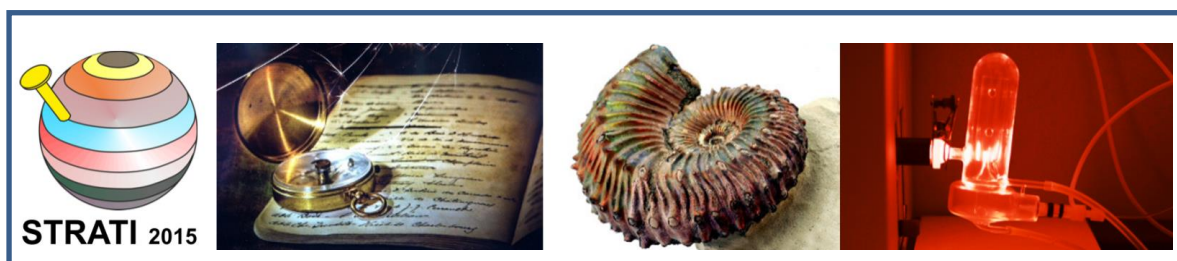
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on-line registrations and abstract submission: <http://conf.uran.ru/Default.aspx?con=90>



Credits (from left to right): Cabri photo; www.fossilmuseum.net; Diego Pinetti.

Dear Colleagues,

We are organising a session as part of the **2nd International Congress on Stratigraphy STRATI 2015** (strati2015.uni-graz.at) to be held in Graz in 2015 (July 19th–23rd) and we hope that you may consider presenting something related to your research on this occasion.

Session Title:

The contribution of fossils to chronostratigraphy, 150 years after Albert Opperl

Conveners: Marco Balini¹, Annalisa Ferretti², Stanley Finney³ and Simonetta Monechi⁴

1) Università degli Studi di Milano, Italy. *E-mail address:* marco.balini@unimi.it

2) Università degli Studi di Modena e Reggio Emilia, Italy. *E-mail address:* ferretti@unimore.it

3) California State University at Long Beach, USA. *E-mail address:* scfinney@csulb.edu

4) Università degli Studi di Firenze, Italy. *E-mail address:* simonetta.monechi@unifi.it

The 150 anniversary of the death of Albert Opperl (1831-1865) provides the opportunity to celebrate this outstanding stratigrapher with a session dedicated to the discussion on the importance of fossils for dating and correlation of sedimentary rocks.

The session aims to bring together apparently unrelated diverse lines of investigation in order to define and compare through a long time slice the significance of diverse fossil groups in an attempt to explore their potential for high resolution stratigraphy and for unravelling their modern contribution in chronostratigraphy.

The session title is deliberately wide-ranging and can be broadly interpreted, and therefore all researchers working on different fossil groups, from Paleozoic to Holocene, are encouraged to participate. The central theme is related to fossil contribution in chronostratigraphy. Some of the specific topics to be explored are listed below:

- History of bio- and chronostratigraphy
- History of zones
- The first fossil-based chronozone in the Geological Time Scale
- Modern definition of zones: theory and practice
- From First Occurrences to First Appearance Datum: time calibration of bioevents

- Zones or bioevents as tool for high resolution chronostratigraphy? Examples from Paleozoic to Holocene
- Evolution, evolutionary rates and power of resolution of the most important fossil tools
- Fossils and long distance correlations
- Facies-controlled and time-controlled taxa: myth and reality

We hope that a high profile session would achieve important results in bringing together researchers with varied data, which published as a volume on the topic would then give impetus to further research and future correlation projects, representing a living heritage of Albert Opper's profile. Our intention is to publish a collection of papers resulting from the proposed session as a Special Issue of a peer-reviewed journal with a high impact factor. We have already sent a preliminary outline to one journal and are awaiting their response.

We sincerely hope you or members of your research group will consider our invitation to be part of this innovative exploratory session and look forward to hearing from you soon. More information at <http://www.opper150.unimore.it/>.

**Abstract submission on strati2015.uni-graz.at
DEADLINE 24 APRIL, 2015**

Marco Balini, Annalisa Ferretti, Stanley Finney and Simonetta Monechi

SILURIAN RESEARCH 2014: NEWS FROM THE MEMBERS

(in alphabetical order)

Anna ANTOSHKINA (Russia): I continue to work on the Paleozoic organic buildups and Lower Paleozoic sedimentation of the Timan-Northern Ural region. Two of my graduate students, post-graduate student Luba Shmeleva, and two young scientists, Evgenij Ponomarenko and Nataliya Kaneva, have studied the Upper Ordovician succession (including the Bol'shaya Kos'yu reef) and the Lower Ludfordian reef Ilych in the Northern Urals. They have collected data on stratigraphy, biostratigraphy, and reef paleoecology of the studied outcrops.

Anna Antoshkina

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Gudvig BAARLI (USA): During 2014, I cooperated with colleagues from Nanjing on a manuscript describing a new genus of atrypid occurring in China and Norway. It is now submitted for publication. I also started a project describing the Llandovery atrypids from the central Oslo Region with Huang Bing from Nanjing. In that connection, I visited and used the collections at the Natural History Museum in Oslo and augmented that with some days in the field. Besides the work on Silurian, I also have been busy working on Neogene strata from the oceanic islands of Macaronesia.

Gudvig Baarli

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Chris BARNES (Canada): I am continuing Silurian conodont paleontology, stratigraphy, isotope geochemistry research. The main current projects include: **a)** Silurian paleotemperature record determined from SHRIMP oxygen isotope measurements using conodonts (with Julie Trotter (UWA), Ian Williams (ANU) and Peep Männik (TUT)); and **b)** Ordovician and Silurian conodont biostratigraphy and paleoecology, Canadian Arctic Islands (with Zhang (GSC), Jowett and Carson (PetroCanada)).

Chris R. Barnes

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Richard BATCHELOR (UK): I have not published on Silurian matters for some years now but I did publish two papers on Upper Ordovician bentonites last year. I don't know if these are relevant to you.

Richard Batchelor

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Alain BLIECK (France): In fact, I had no Silurian activities in 2014. Mostly I have been working on the history of geology (concerning our local Geological Society of northern France, the SGN) and on Early Devonian vertebrates from North France and Belgium.

Alain Blicck

Directeur de recherche émérite du CNRS / CNRS emeritus senior scientist
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Olga BOGOLEPOVA (UK): I continue to work on Silurian organic-rich black shales of Russia with regard to their bio- and lithostratigraphy, and geochemistry. See <http://www.casp.cam.ac.uk/projects/silurian-organic-rich-source-rocks-project-2014-2015> for more information.

Olga K. Bogolepova

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Carlton BRETT (USA): In 2014, my work on Silurian could be differentiated into three aspects. **A)** Research on new Silurian stratotypes. During August 2014, I travelled to China for the IGCP meeting in Kunming and field conference in Yunan Province, SW China, as well as for research on new potential Aeronian and Telychian stratotype sections in Hubei Province, central China. In a field research party headed by Dr. Fan Junxuan (Nanjing Institute of Geology and Palaeontology, NIGP) and ISSS Chair, Mike Melchin, together with other voting members of ISSS, I spent four days examining, measuring, and sampling sections along a roadcuts at Bajiaomiao and a new locality near the Cijieping Restaurant, in the Shennongjia National Forest region. These locations feature very complete outcrops with excellent graptolite biostratigraphic control and a number of K-bentonite (volcanic ash) layers, which may eventually allow for direct U/Pb dating. I was also able to make a preliminary paleoenvironmental and sequence stratigraphic interpretation of the outcrops and to link three major TR cycles, tentatively with global curves, suggesting at least some eustatic control. In addition, I was very excited to visit sections of Silurian rocks of the Yunnan Province during the spectacular post-meeting field excursion of the IGCP 591 Kunming meeting in August 2014. This trip fostered interests in making studies of comparative sequence stratigraphy and bioevents in the Silurian of South China and Laurentia.

B) Research on Silurian sequence and chemostratigraphy: Ohio-Kentucky-Indiana-Tennessee, New York, Pennsylvania, and Ontario, Canada (funding by NSF and US Geological Survey). In the past year I continued working with Dr. Pat McLaughlin (Wisconsin Geological Survey) and graduate students James Thomka, on Silurian sequence, chemo- and event stratigraphy and paleoecology of southern Laurentia, and Matt Vrazo, on upper Silurian eurypterid-bearing strata. In particular, James Thomka and I have been working on the detailed sequence and cycle stratigraphy, paleoecology (especially of echinoderms) and paleoenvironments of the early Wenlock interval in Indiana, Kentucky, and Tennessee. Several papers were published or are in press.

Research with PhD student Matt Vrazo, on the sequence stratigraphy and depositional environments of Late Silurian Salina and Bertie Groups in the Appalachian Basin and the eastern Mid-continent, was extended in 2014. These are peculiar facies, including widespread evaporites and peritidal carbonate facies, locally rich in fossil eurypterids. We continued field study with geologist Jeffrey Trop of Bucknell University in Lewisburg, Pennsylvania on the sequence stratigraphy of the Tonoloway Formation in central Pennsylvania. We have published a manuscript dealing with a spectacular new eurypterid Lagerstätten recently discovered near Winfield, PA. This occurrence provides new data and insights into the paleoenvironments of the enigmatic eurypterids, the topic of Vrazo's PhD dissertation, now nearing completion. In addition, we continued field study of Bertie Dolostone outcrops with Mr. Samuel Ciorca of Rochester, NY, an avocational paleontologist with exceptional knowledge of eurypterid-bearing strata. We hope, in the next couple of years, to produce a synthesis on sequence and chemostratigraphy of these highest Silurian beds.

Nicholas Sullivan (MS, 2013), Pat McLaughlin and I published a series of papers dealing with revised stratigraphy of the mid Silurian Telychian interval in eastern North America. New biostratigraphic studies, in conjunction with Dr. Mark Kleffner (Ohio State University at Lima, Ohio). These studies are refining our views associated with the Valgu and early Ireviken bioevents in eastern North America. These and other recent discoveries are leading to a strongly revised regional stratigraphy and we have developed a series of new stratigraphic correlation charts to show newly established relationships.

I am also working in collaboration with Dr. Frank Brunton of Ontario Geological Survey (Sudbury) on refining correlations and patterns of sequence stratigraphy and isotope stratigraphy across the border from New York State and Ohio into Ontario, Canada.

C) Estonia. Participation in the outstanding IGCP 591 field conference and excursions in Estonia fostered my interests in correlations between Laurentia and Baltica. In particular, comparisons suggest strongly similarities between the successions of Sheinwoodian age in Saaremaa and those of the Niagara region. This could lead to further collaborative study on correlation of depositional sequences, time-specific facies, and improved eustatic curves for the Silurian.

Carlton E. Brett

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Carole BURROW (Australia): My work on late Silurian jawed vertebrates from several localities in eastern USA and Canada continues. Sue Turner (QM) and I continue to work on material from Maine. Study on an articulated ischnacanthiform from the late Silurian of Canada has resulted in publication of a descriptive paper co-authored by David Rudkin of the Royal Ontario Museum, Toronto (Burrow and Rudkin, 2014). Silurian Australian vertebrates remain elusive, but I am hoping, in collaboration with Sue Turner, Kate Trinajstic, and Gavin Young, to complete descriptions this year of material from a borehole in Western Australia, a project which commenced nearly two decades ago. A short update on that work was included in the review of mid-Paleozoic vertebrates of WA by Trinajstic *et al.* (2014). I am also working with Sue on the vertebrate microremains (Turner *et al.*, 2014) and with Mike Newman and other European colleagues (Newman *et al.*, 2014) on acanthodian macroremains from the late Silurian-Early Devonian of the Welsh Borderlands, work spurred on by attending a meeting in Brecon in 2014 on the AngloWelsh Old Red Sandstone.

Carole J. Burrow

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Mikael CALNER (Sweden): I am continuing to work on the stratigraphy and sedimentology of Paleozoic strata. In 2014 I spent some time on field work in England and Wales in order to study Silurian type sections and other key localities. This was certainly a good experience and I hope to get back to these sections soon to learn more about them.

Mikael Calner

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Robin COCKS (UK): The year was spent largely in the initial work for a book with Trond Torsvik (Oslo) on Phanerozoic paleogeography, and a contract has been signed with Cambridge University Press for that manuscript to be delivered in January 2016. Thus there have been three visits to Oslo, as well as much library work in London. Seeing the Late Ordovician from Pembrokeshire and the Late Ordovician of the Chingiz Terrane of Kazakhstan (with Leonid Popov, Cardiff) brachiopod papers through the press also took time; as well as the preparation, submission and acceptance of a paper for a Geological Society Memoir on the Cambrian to Devonian of Burma with Aye Ko Aung (University of Malaya). Acceptance in title of a Paleontographical Society Monograph on the Middle and Late Llandovery brachiopods of England and Wales has necessitated visits to museums at Oxford, Birmingham, and the British Geological Survey at Keyworth, prior to getting specimens photographed, a task which is now over halfway done. A paper on Ordovician to Devonian paleogeography was delivered at the Gondwana Symposium at Madrid in July.

L. Robin M. Cocks

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Paul COPPER (Canada): Working on revised stratigraphy of Anticosti Island, biodiversity data for Early Silurian and Late Ordovician formations of the island, paleoecology and lateral distribution of invertebrates (brachiopods, corals, stromatoporoids). Taxonomy and evolution of the atrypides, athyrides and spiriferides, covering ca. 100 species, 38 genera. Revision of *Hindella*, *Cryptothyrella* and *Koigia* across the O/S boundary. Ongoing publication covering Devonian atrypides of the Eifel region, held in abeyance for Dr Wolfgang Struve since 1965: new collections to be stored at the Humboldt Museum in Berlin, where I have sorted out the old materials.

Paul Copper

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Carlo CORRADINI (Italy): Our work on Silurian conodonts and biostratigraphy continues. The main research areas are the Carnic Alps, Sardinia, and other North Gondwana regions. In the Carnic Alps, I am investigating the Silurian and Lower Devonian *Orthoceras* Limestone, both studying new sections and updating data from classical localities. In this respect, a revision of the biostratigraphy of the Silurian part of the Cellon section has been published and the taxonomic and biostratigraphic studies on the conodont fauna from several sections of Ludlow to Lochkovian are in progress (with M.G. Corrigan). Researches in the Carnic Alps include also geological and paleontological investigation (with L. Simonetto, M. Pondrelli and others). A project with the goal to achieve a formal lithostratigraphy of the pre-Variscan sequence of the Carnic Alps is almost concluded with the redefinition of all the formations from Ordovician to Lower Carboniferous, in cooperation with several colleagues from Italy, Austria and other countries.

In Sardinia, I am studying calcareous sections (with M.G. Corrigan) and black shales outcrops. Samples from localities in the Spanish Pyrenees, Montagne Noire and Bohemia are in progress, and three papers on the "Schypocrinites beds" of Tafilalt (Morocco) have been published. Finally, a conodont fauna from the San Juan Precordillera (Argentina) is being studied (with A. Mestre and S. Heredia).

Carlo Corradini

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Maria CORRIGA (Italy): I am working on conodont taxonomy and biostratigraphy across the Silurian-Devonian boundary in Sardinia, the Carnic Alps and other North Gondwana regions. In the Carnic Alps, I am investigating the Silurian and Lower Devonian *Orthoceras* Limestone, and several sections are under study, including Cellon, Rauchkofel Boden and other classical and new sections. In Morocco the conodont and crinoid biostratigraphy of three sections spanning the S/D boundary in Tafilalt has been published.

Maria G. Corrigo

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André DESROCHERS (Canada): I am actively working on the Upper Ordovician to Lower Silurian strata exposed on Anticosti Island, Canada. We recently published (Ghienne *et al.*, 2014) a global correlation framework of the end Ordovician glaciation events using opposite near- and far-field domains, the Anti-Atlas in Morocco and Anticosti Island in Canada respectively. Current research projects at the University of Ottawa by graduate students include the following: 1) depositional setting and geochemistry of major units at the O/S boundary on Anticosti Island (Mauviel) and 2) architecture and composition of end-Ordovician reefs (Castagner). A number of collaborative projects are also in progress including: 1) the use of $\delta^{18}\text{O}$ values of conodont apatite for testing whether significant orbital-scale climatic fluctuations controlled the development of widespread marine sedimentary cycles during the late Ordovician (with Maya Elrick and James Wheeley); 2) the use of Li and Ca isotopes to decipher drivers of end-Ordovician glaciation (with Philip Pogge von Strandmann); and 3) revisiting clumped isotope temperature data from organic material across the O/S boundary (with Ruth Kirk and Paul Dennis).

André Desrochers

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Frank ETTENSOHN (USA): My colleagues and I continue to work on the influence of Salinic tectonics on foreland-basin sedimentation in eastern Kentucky, as well as on the nature and origin of Early Silurian dysaerobic environments. The makeup of Early Silurian dysaerobic faunas in our Kentucky sediments is somewhat different than that found in Devonian and later dysaerobic settings.

Frank R. Ettensohn

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Annalisa FERRETTI (Italy): My Silurian research continues to be focused on the biosedimentology and paleoecology of the Austrian Carnic Alps. I have recently coordinated a project, involving several international researchers, on the formal institution of lithostratigraphic units in the Silurian of the Carnic Alps. Five units have been recognized and will be introduced in a 2015 issue of the "Abhandlungen der Geologischen Bundesanstalt". A cooperation project (with P. McLaughlin and P. Emsbo) on the study of Silurian ironstones in the US, centered on the comparison with coeval occurrences in the Carnic Alps, has just started.

The session "The contribution of fossils to chronostratigraphy, 150 years after Albert Oppel" (with M. Balini, S. Finney and S. Monechi) has been proposed at the 2nd International Congress on Stratigraphy-STRATI 2015 (Graz, Austria). The 150th anniversary of the death of Albert Oppel provides the opportunity to commemorate this outstanding stratigrapher with a session dedicated on fossils in the modern chronostratigraphy. Our session is devoted to discuss contributions on: history of bio- and chronostratigraphy; definition of zones; from FO to FAD: time calibration of bioevents; evolutionary rates and power of resolution of the fossil tools; fossils and long distance correlations; facies-controlled and time-controlled taxa. A thematic set of papers arising from the STRATI-2015 Symposium will follow as a Special Issue of a peer-reviewed journal. Silurian contributions are very welcome!

Annalisa Ferretti

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Mansoureh GHOBADI POUR (Iran): I continue my work on various aspects of Silurian paleontology, lithostratigraphy, biostratigraphy and biofacies of central Iran and Iranian Kopet-Dagh. Projects in progress include (1) silicified Llandovery (Aeronian) micromorphic trilobites from the Niur Formation of Derenjal Mountains, central Iran (jointly with Robert Owens and Leonid Popov), (2) Silurian (Aeronian) cephalopods of Kopet-Dagh (jointly with David Evans and Leonid Popov), and (3) Lower Devonian (Lochkovian) trilobites and brachiopods from the West Balkhash Region (jointly with Leonid Popov, Elena Vinogradova and Inna Klishevich).

Mansoureh Ghobadi Pour

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Luke HAUSER (United Kingdom): I have continued my work on the Downton Bone Bed in the Welsh borders. I have finally discovered a way of breaking down the Downton successfully and am currently writing up a paper describing this new method which has yielded exciting material. I have now started the SEM work looking at the vertebrates and hope to have this completed by the end of the year. I am also planning to compare the

Downton to the bone beds on Gotland discussed in Eriksson *et al.* (2009) which show a change in diversity associated with the Lau event and with the Downton's proximity to the Ludlow Bone Bed, which is linked to a large positive CIE (Loydell and Frýda, 2011), the question is, is the Downton's diversity influenced purely by environmental and geographical factors or did the Lau event have an effect on diversity? Other goals for this year are to get to grips with the ostracodes and palynomorphs. Also this year I am hoping to present some findings at the SVPCA meeting in Southampton (UK).

Luke Hauser

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Kathleen HISTON (Italy): My current research forms part of a study of sea-level changes, oceanic cycles and biotic response in the Ordovician/Silurian of the Carnic Alps and other localities. It is focused on a systematic, taphonomic, paleoecologic and paleobiogeographic study of Silurian cephalopods with a view to greater precision in nautiloid biostratigraphy, establishing nautiloid biozones and defining the migrational pathways of pelagic faunas as a tool for timing of open seaways and microterrene position along the North Gondwana margin.

As part of my activities as co-leader of IGCP Project 591 during 2014, I co-edited with Živilė Žigaitė part 1 of the IGCP 591 Special Issue of the *Estonian Journal of Earth Sciences* which was issued in December 2014 (Issue 4, vol. 63 <http://www.kirj.ee/earthsciences>). This first thematic set of 23 papers (see list below) resulted from presentations given at the 4th annual IGCP 591 symposium held in Tartu, Estonia in June 2014. Part 2 of the Special Issue will be published in March 2015 with 22 papers.

Kathleen Histon

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HUANG Bing (China): This year, I was mainly concentrating on two things: (1) Working on a brachiopod fauna from South China during the recovery interval after the end Ordovician mass extinction. Preliminary study has already been published, and detailed systematic work has been submitted. (2) Numerical methods in brachiopod systematics. Some statistical questions, such as abundance model and sampling efficiency, have been carefully investigated and some preliminary results have been published.

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Jisuo JIN (Canada): In 2014, my work related to the Silurian focused mainly on the collaboration with Dr. Paul Copper to revise the Rhudanian Bacscie Formation and the upper Aeronian to mid-Telychian Jupiter Formation of Anticosti Island. Our collaboration is going to provide a comprehensive documentation of the extremely rich and diverse brachiopod fauna of Anticosti Island, Canada.

Jisuo Jin

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Markes JOHNSON (USA): During the past few years, my interests have shifted to the regional geology of landscape evolution during intervals of draw-down in sea level. The classic geological interval for this kind of work is at the Ordovician-Silurian boundary. Previous work was focused on the paleotopography developed at the O/S boundary in the midwestern states of Iowa, Illinois, and Wisconsin in the USA. An intricate river system was cut into exposed Upper Ordovician shales during the marine draw-down. More recently, I have applied this approach to landscape development to fluvial and deltaic systems in the Upper Devonian of Western Australia and to the Lower and Middle Pliocene along the gulf coast of the Baja California peninsula in Mexico.

Markes E. Johnson

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Dimitri KALJO (Estonia): I am continuing studies on the Ordovician and Silurian bio- and chemostratigraphy of Baltica as a part time emeritus member at our institute and as the editor-in-chief of our journal. This year was rather busy due to IGCP 591 annual meeting in Estonia. Many project members published their short papers in the Estonian Journal of Earth Sciences (a special issue pt. 1 as No 4, 2014; pt. 2 will come as No 1, 2015). I am glad to thank Guest Editors Kathleen Histon and Živile Žigaitė for their huge contribution into these publications.

Dimitri Kaljo

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Stephen KERSHAW (United Kingdom): I am undertaking a long-term study of applications of calcified sponges (especially stromatoporoids) to understanding ancient shallow marine environments, particularly of the Paleozoic Era of geological time.

New work on a co-study of stromatoporoids and corals, undertaken in detail in collaboration with Dr. Mari-Ann Motus, Tallin Institute of Geology, Estonia, is in press in the journal Acta Palaeontologica Polonica, accepted manuscript available from the journal website. This work was presented at the third meeting of International Geoscience

Programme project called IGCP591 “The Early to Middle Paleozoic Revolution” in Tallinn, Estonia, June 2014. The project is focused on the well-known Katri biostrome, Ludlow age, in westernmost Estonia. This site has much similarity with the Hemse Group biostromes on Gotland, although are a little younger. The stromatoporoid-coral suite exists in two interbedded facies, which are compressed by pressure solution; nevertheless we were able to discriminate a higher energy facies from a lower energy one, with somewhat different faunas and growth forms of corals and stromatoporoids. Furthermore in comparison with nearby Gotland there are some faunas in common, but some on Gotland are missing from Katri, and vice versa. This information provides a new perspective on the geographic capabilities of corals and stromatoporoids to disperse and draws attention to complexities in mechanism; they did not just drift with currents apparently. More work of this kind is needed.

Extensive data collection in the last 2 years that reinforces the evidence that stromatoporoid assemblages tend to contain only ca. 2-3 species in abundance and all other species are uncommon. This pattern is again showing itself in my new work on British stromatoporoids, which have never been studied before in the detail that I am currently building; the first part of this work was presented at the second meeting of International Geoscience Programme project called IGCP591 in Lund, Sweden, June 2013, and the remaining part is planned for this year, with field work and subsequent processing of samples in Brunel.

Much of my research is displayed on my personal website at: <http://earthsurfaceprocesses.com>. In this website is an expanded illustration set, because journals cannot publish all the images that authors want to show, so I put them on my website. Please take a look and give me comments if you wish.

Stephen Kershaw (PhD)

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Tarmo KIIPLI (Estonia): We published available data and correlations based on sanidine compositions of Silurian bentonites from Lithuania in the frame of graptolite zonation. Also we published review of Caledonian volcanism recorded in Baltoscandian sedimentary rocks. Two papers about Ordovician bentonites of the Baltoscandian region have appeared. Besides, I contributed geochemistry and correlation of bentonites to studies of some other researchers.

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Jorge Colmenar LALLENA (Spain): I'm not exactly a Silurian researcher yet, because I have only published in Ordovician until now. But I'm sampling Spanish Silurian brachiopods unknown so far to analyze the recovery patterns of the brachiopod faunas

after the Hirnantian extinction, so I'll be a Silurian researcher soon.

Jorge Colmenar Lallena

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Alain LE HERISSE (France): I continue on several projects related to organic-walled microfossils (acritarchs and associated microalgae) from the Paleozoic, with emphasis on biostratigraphy and evolution of biodiversity in response to climatic and oceanographic changes. Current activities include: (1) Study of acritarchs and other microalgae in the Middle Ordovician of Saudi Arabia, in collaboration with Marco Vecoli, Aramco. (2) Study of Ordovician to upper Devonian microphytoplanktonic associations from northern Brazilian Basins, in collaboration with José Henrique Melo, Petrobras. (3) Microfossil associations from the Early Devonian of Uruguay, in collaboration with Gloria Daners, University of Montevideo. (4) Early Devonian microfossils from the Rhynie chert, Scotland, in collaboration with Christine Strullu, British Museum. (4) Phytoplanktonic associations from Paleozoic of North Africa (Morocco, Algeria, Libya, Tunisia) mainly on subsurface material.

I am currently working on a revision of the Ordovician to Devonian acritarch biostratigraphy, in the Paleozoic of the Brazilian basins in collaboration with José Henrique Melo, Petrobras, Rio. I am also working on Lower Devonian palynomorphs of the Cordobes Formation of Uruguay, in collaboration with Gloria Daners of Montevideo, and on microfossils in the Rhynia chert of Scotland in collaboration with Christine Strullu-Derrien, London. I have completed with Stewart Molyneux and Merrell Miller a contribution dealing with acritarch evolution to the Ordovician/Silurian boundary in Saudi Arabia, which will be integrated in a collective volume of Review of Paleobotany and Palynology. I also continue to supervise the PhD work of Tristan Hatin on Late Quaternary diatoms in the Congo deep sea fan, Zaïre.

Alain Le Hérisse

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LI Qijian (China): In 2014, we finished the quantitative paleoecological analysis of a Late Ordovician reef at Zhuzhai, which is one of the best-known examples of coral–stromatoporoid reefs from southeast China. We demonstrate an allogenic succession in the reef, which is probably related to the increasing terrestrial input from the northwestward expansion of the Cathaysian Land during the late Katian. The paper was just accepted by Estonian Journal of Earth Sciences in December.

Furthermore, we document lithistid sponge-*Calathium* reefs from the Upper Hunghuayuan Formation (early Floian) at Huanghuachang in Hubei, South China. These reefs have a three-dimensional skeletal framework that is mostly produced by *Calathium*

and lithistid sponges. Morphological, constructional and functional analyses show that *Calathium* was a sponge-grade metazoan rather than a receptaculitid alga as previously thought. Base on the materials from the South China and the data from Paleobiology Database, we provide evidence that gradual global cooling through the Early Ordovician may have been a key driver for the recovery of metazoan reefs. This paper just came out of the review and is in revision at the moment.

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Steve LODUCA (USA): I continue to work on the taphonomy, systematics, functional morphology, paleobiogeochemistry, and evolution of Early Paleozoic macroalgae, especially dasyclads. Work also continues on the stratigraphy of Silurian units within and adjacent to the Michigan Basin. Lately, I have been working mainly in the Cambrian. As a result, I have some Cambrian publications from the past year, but no Silurian publications to report at this time. Soon, I will be back to working on the Silurian.

Steve LoDuca

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David LOYDELL (UK): 2014 at last saw the completion of the work on the graptolites from the graptolitically continuous Aeronian-Telychian boundary sections around the El Pintado reservoir, Spain. This is now being written up for publication.

David K. Loydell

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Štěpán MANDA (Czech Republic): In 2014, we finished a project of integrated biostratigraphy (graptolites, conodonts, benthic fauna, chemostratigraphy) of Ludlow in Bohemia (Štorch *et al.*, 2014; Slavík *et al.*, 2014; Manda and Frýda 2014). A fauna of carcinosomatid eurypterids was published (Budil *et al.*, 2014). Our current attention is mainly paid to the reevaluation of some Silurian GSSPs. Multidisciplinary study of two potential GSSP candidate sections in the Barrandian area (Prague Synform) – Rhuddanian-Aeronian boundary section in Hlasna Treban and Sheinwoodian-Homerian boundary section in Kosov Quarry – both of these studies received funding from Czech Science Foundation. A monograph on Rhuddanian-Aeronian boundary graptolites and multi-proxy study of the Hlasna Treban section are in progress. Joint work is continued with Vojtěch Turek on Silurian cephalopod faunas of Bohemia and Gotland.

Štěpán Manda

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Peep MÄNNIK (Estonia): I am actively working on evolution, taxonomy and paleoecology of conodonts, conodont-based high-resolution stratigraphy, bioevents and paleogeography. I am also interested in sequence stratigraphy, paleoclimatology and evolution of sedimentary basins. Joint studies together with colleagues from Estonia, Germany, Iran, Russia, Sweden, U.K. and USA on evolution and high-resolution stratigraphy of the Early Paleozoic faunas and sedimentary basins on different paleocontinents are going on. Conodont-based paleoclimatological studies (Upper Ordovician–Silurian) are in progress.

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Sandy MCCRACKEN (Canada): I continue to work on Middle to Upper Ordovician, Silurian and Devonian conodonts from various locations in Canada. My concentration is on the good collections from Hudson Bay and Moose River basins, Ontario and Manitoba, respectively.

Alexander (Sandy) D. McCracken

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Kristina MEHLQVIST (Sweden): I am a palynologist working on Ordovician-Silurian of Baltoscandia. I finished my PhD thesis in 2013: *Early land plant spores from the Paleozoic of Sweden: taxonomy, stratigraphy and palaeoenvironments*. I was helping Prof. Mikael Calner edit the abstract volume for IGCP 591 annual meeting in Lund 2013. I am now also working on a paper on the palynology of the Övedkloster drillcores from Skåne, Sweden of Silurian/Devonian age. Currently I am applying from the Swedish Research Council for a post-doc position.

Kristina Mehlqvist

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Michael MELCHIN (Canada): I am currently working on several projects related to graptolite biostratigraphy and biodiversity, as well as chemostratigraphy through the Late

Ordovician and Early Silurian, particularly in North America, Europe, and China. I am collaborating with Charles Mitchell, David Sheets, Petr Štorch and others, on the study of Late Ordovician–Early Silurian faunas in Bohemia, Scotland, and Fan Junxuan and Chen Xu on the study of Rhuddanian–early Telychian graptolites from South China, including two potential GSSP candidate sections. I am working on project with Dan Goldman, Chuck Mitchell, Fan Junxuan and others on quantitative graptolite biogeography. I have been working with Alf Lenz and Ania Kozłowska on some isolated Llandovery graptolites. I am also working with a number of collaborators on the integration and quantitative correlation of data for several latest Ordovician and early Silurian stage boundary intervals.

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Tatiana MODZALEVSKAYA (Russia): All the past year I worked on Silurian-Devonian brachiopods from eastern Central Pamir in collaboration of Leonid Popov (UK) and M.S. Dufour (St. Petersburg University). A low diversity brachiopod association has been documented for the first time. It shows great similarity in common composition with the brachiopod fauna of the beginning of the Early Devonian, which was widespread in Old World Realm, North America, southern Siberia (Altai-Sayan area) and South China (Sichuan). I am keeping on working on new material of Upper Ordovician-Silurian brachiopods from Kotel'ny Island (Novosibirsk Islands, Arctic Russia). In the Upper Ordovician the brachiopod association *Tcherskidium unicum* Nikolaev is dominated, which was well known from the Tirekhtykhian regional stage of North-East of Russia in the *Climacograptus supernus* graptolite Zone (Katian). Silurian brachiopod association includes species of widely distributed genera known in North Atlantic, Novaya Zemlya-Urals and Siberian paleobiogeographical brachiopod provinces.

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Axel MUNNECKE (Germany): I am currently working on Ordovician and Silurian carbonate microfacies and chemostratigraphy in different areas (China, Gotland, Poland, Podolia, etc.). In addition, I am interested in the biological response to the pronounced climatic changes that took place during this time interval.

Axel Munnecke

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Godfrey NOWLAN (Canada): I retired from the Geological Survey of Canada (GSC) in 2013 and suffered a stroke in May 2014 that deprived me of one quarter of my vision and so I have not been undertaking research for some time. I am working hard on rehabilitation to improve my quality of life and have made some progress, but professional research activities are suspended tentatively. I continue to play a leadership role in Geoparks in Canada and retain an office and volunteer role with GSC.

Godfrey Nowlan

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Ian PERCIVAL (Australia): Although this is my first contribution to *Silurian Times*, I have been surreptitiously straying upwards from the Ordovician into Silurian paleontology for many years. Currently I am involved in three Silurian-focussed projects, the first with Des Strusz (Canberra) which is investigating the diverse Wenlock to Ludlow brachiopod fauna of the Quidong area in southern New South Wales. Preliminary results of this study will be presented at the 7th International Brachiopod Congress in Nanjing in May 2015. The second project concerns a paleoecological study of the deep-water fauna (including graptolites, trilobites, brachiopods, molluscs, starfish and sponges) from the Cotton Formation at Forbes in central NSW. The third project (with John Pickett, Michael Engelbretsen *et al.*) is looking at the Ludlow-age Molong Limestone, also in NSW, which has an interesting megalodont bivalve and trimerellid brachiopod association adjacent to a tuff bed yielding zircons for SHRIMP dating. Initial findings from both the latter projects were given at the IGCP 591 meeting held in Estonia in June 2014, and papers on both are currently being written.

Ian G. Percival

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Vincent PERRIER (UK): My research as a Leverhulme Post-Doc at the university of Leicester (in collaborations with Mark Williams and David Siveter) focuses on the different colonization events of the water column and mainly that of Myodocope Ostracodes. Ostracods were early zooplankton colonists, making the ecological shift from the benthos during the Silurian, and leaving behind an unparalleled fossil record of their environmental distribution, and crucially of their soft anatomy. Coupled with detailed work on the physiology of Recent ostracods, there is an extensive dataset from which to assess the ‘when’ (temporally), ‘how’ (carapace design, physiology and functional anatomy), and ‘why’ (environmental and biological feedback mechanisms) ostracods colonized the water column, a major event in the ecological radiation of the group and a model for the study of benthic to zooplanktonic ecological shifts.

I also continue my collaboration with the University of Tartu (Tõnu Meidla, Oive Tinn, Leho Ainsar and Karin Truver) on how Baltic ostracods reacted to rapid environmental changes in the Lower Paleozoic. We now concentrate mainly on the Silurian recovery after the end-Ordovician extinction.

Since January 2015, I am the Ostracod group chair of the Micropaleontological Society. I will keep the world ostracod community informed of the different events (field trips, conferences....) of the society (<http://www.tmsoc.org/ostracod.htm>). I am now also the treasurer of the Group of French Paleozoists, see website below (in French): <http://sites.google.com/site/groupefrancaispaleozoique/home>.

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Jos é Manuel PIÇARRA (Portugal): I have been working on the Lower Paleozoic stratigraphy of South Portugal (Ossa Morena Zone) and also on the Ordovician and Silurian graptolites from Portugal.

Jos é Manuel Pi çarra d Almeida

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Leonid POPOV (UK): Currently I am working on various aspects of Silurian paleontology and biostratigraphy of central Iran and Iranian Kopet-Dagh in cooperation with Mansoureh Ghobadi Pour (Gulestan University, Gorgan) and Vachik Hairapetian (Azad University, Khorosgan Branch, Esfahan). I continue my research on the Wenlock brachiopod faunas from the Zerafshan-Hissar region (Uzbekistan) in cooperation with Irina Kim (Uzbek Geological Survey, Tashkent), and the Llandovery brachiopod faunas of Chingiz Range in Kazakhstan.

Leonid E. Popov

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David RAY (UK): My research activities over the past year have focused upon the Wenlock Series of the Midland Platform (England). In particular, collaboration with Helen Hughes and Emilia Jarochovska has resulted in much data collection. This data collection has been focused upon establishing the details of the Sheinwoodian and Homeric carbon isotope excursions and the associated relative sea-level changes. The preliminary results allow for detailed correlations across the Midland Platform, as well as with other key

sections around the world. I hope to see the publication of much of this research during 2015.

David C. Ray

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John RICHARDSON (UK): I have been trying to finish off an Upper Devonian spore project this year. When I submit this, I will be returning to my Upper Silurian – Lower Lochkovian spores of the Welsh Borderland and South Wales. My 2013-2014 papers were all on in situ spores from this interval and area.

John Richardson

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RONG Jiayu (China): Together with several colleagues of mine in China, I have been revising and compiling the Paleozoic and Mesozoic brachiopod genera established on the type species of China. The monograph (in English) has nine chapters covering six periods of Paleozoic and three of Mesozoic, and includes more than 740 genera and over 100 carefully prepared plates. Hardworking on this for more than 15 years, we have nearly finished the entire manuscript, and it is going to be published by Science Press of China later this year. Besides, together with my colleagues at NIGPAS, I also investigated the geologic affinity of the Xichuan-Neixiang district of southwestern Henan Province, central China using paleontological and stratigraphical data. Some people suggested this area was an isolated block during the Early Paleozoic, but others thought it part of South China or North China paleoplates. We found *Rongatrypa* Fauna and *Cathaysirorthis* Fauna in this area from the Upper Ordovician and the Llandovery respectively, so we suggest this area belong to the northern part of South China paleoplate during the Early Paleozoic. Relevant paper has already been published in *Journal of Stratigraphy* (in Chinese with English summary).

Rong Jiayu

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Claudia RUBINSTEIN (Argentina): I am currently working on marine phytoplankton and miospores from Ordovician, Silurian and Devonian strata of western Argentina. Concerning the Silurian, my projects and recent contributions mainly deal with palynomorph assemblages, biostratigraphy, paleogeography, paleoenvironments and paleoclimates of the Llandovery, Wenlock, Ludlow and Pridoli in the Precordillera Basin, central-west Argentina, and the early Silurian of the Central Andean Basin, north-west Argentina.

Claudia V. Rubinstein

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Valeri SACHANSKI (Bulgaria): I am actively working on Ordovician-Devonian stratigraphy of Bulgaria and Turkey and especially on Silurian-Lower Devonian graptolite biostratigraphy.

Valeri Sachanski

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Paul SELDEN (USA): As last year, I am not currently working on any Silurian projects, but I do have one 2013 paper on Silurian scorpions. My work at the moment ranges from Cambrian, Devonian, Carboniferous, Triassic and Jurassic. These are various arthropods, including crustaceans and arachnids. Nearly all of my publications can be downloaded from my web site: paulselden.net

Paul Selden

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Lawrence SHERWIN (Australia): I retired at the end of 2014 but remained affiliated with the Geological Survey as an Honorary Research Associate. Still in progress is the taxonomic work on Early Silurian graptolites from Goulburn and Bungonia that began with the late Tatiana Koren' but is now a joint project with Tony Wright and Anna Sujarkova. This will be followed by work on Silurian graptolites from the central west of New South Wales to help complete the project started by Tony Wright and the late Barrie Rickards. Other work completed during 2013 was correcting the computerised catalogue of graptolites in the Geological Survey collection. I attended the 4th annual meeting of IGCP 591 in Estonia and presented a joint abstract with Ian Percival and Geoff Thomas.

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Andrew SIMPSON (Australia): 2014 has been a year for rediscovering Paleozoic projects. I have been working on sparse conodont faunas from the geographically vast Cobar super group of western New South Wales (Australia) with colleagues of the former Macquarie University Centre for Ecostratigraphy and Palaeobiology: Ruth Mawson, John Talent and David Mathieson. A manuscript is near completion. The study mostly deals with Early Devonian faunas but one significant late Ludfordian fauna is being documented. I am also looking at other documented, but unpublished, Silurian conodont faunas from eastern Australia with a view to publication.

Andrew Simpson

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Constance SOJA (USA): I am continuing my research on Siluro-Devonian rocks of the northern Hemisphere to understand the underlying causes of faunal turnover in biotas that inhabited the Uralian seaway. Our research shows that proximity of Alaska's Alexander terrane to the Caledonide orogenic front led to enormous evolutionary change, which is recorded in the Heceta and Karheen formations. These units represent the transition from molasse to flysch and the deposition of 1800 m of Old Red Sandstone-like sequences. They reveal that Caledonide orogenesis generated significant terrestrial influx thereby reducing habitats for normal-marine metazoans, elevating nutrient loads, and, ultimately, fueling extensive microbial "blooms". Comparative analysis with coeval Lake Orcadie deposits in Scotland shows that the thin, platy limestone in the Karheen Formation is lacustrine, not marine, in origin and accumulated as varved sediment in deep, permanently stratified lakes in cyclic association with siliciclastic, lake-margin facies.

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Philippe STEEMANS (Belgium): I was keeping working on the Ordovician-Devonian palynology and related geologic (particularly stratigraphical, paleoecological and paleobiogeographical) problems during 2014. Together with my international colleagues, I have published quite a few preliminary results of our collaborations.

Philippe Steemans

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Petr ŠTORCH (Czech Republic): Systematic bed-by-bed study of continuous Ludlow succession, exposed by a series of trenches in graptolite-dominated shaly facies of the western part of the Prague Synform, has been completed in collaboration with Štěpán

Manda, Jiří Frýda, Zuzana Tasáryová and L. Slavík. Ludfordian and uppermost Gorstian part was published (Manda *et al.*, 2012; Štorch *et al.*, 2014) whereas the work on middle and lower Gorstian part (including Wenlock/Ludlow boundary interval) is in progress. Two papers describing lower and middle Gorstian succession and its rich plectograptine and monograptid fauna are under preparation. Major current attention is paid to the reevaluation of some Silurian GSSPs. Multidisciplinary study of two potential GSSP candidate sections in the Barrandian area (Prague Synform) – Rhuddanian-Aeronian boundary section in Hlasna Treban and Sheinwoodian-Homerian boundary section in Kosov Quarry – both of these studies received funding from Czech Science Foundation. A monograph on Rhuddanian-Aeronian boundary graptolites and multi-proxy study of the Hlasna Treban section are in progress. Joint work continued with Jan Mortier on integrated chitinozoan-graptolite stratigraphy of Condroz Inlier, Belgium, and with Juan Carlos Gutiérrez-Marco and Josep Roqué-Bernal on O/S boundary graptolites of Catalonian Pyrenées, Spain.

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Desmond STRUSZ (Australia): The study of the Silurian brachiopod fauna of the Quidong Basin in far southeastern New South Wales, being done jointly with Ian Percival (NSW Geological Survey), has been progressing steadily, and should be completed before the end of 2015. There are several new species in the fauna, including a couple of potential significance to phylogeny and palaeobiogeography. It is hoped to make a start later in the year on brachiopods from the Capanana Formation outcrops near Bredbo, south of Canberra - less distorted than those previously published from east of Cooma.

Although now working at home, I remain a Research Associate of the Australian Museum, Sydney, and a School Visitor at the Research School of Earth Sciences, Australian National University.

The paper by Perrier *et al.* published on-line at the end of 2013, while mainly concerned with myodocope ostracods from Canberra, did provide the first graptolite-based evidence for the age of the Canberra Formation, with *Monograptus flemingii* from a locality on the northern margins of Canberra indicating the *Pristiograptus dubius* to *Cyrtograptus lundgreni* biozones - middle Sheinwoodian to middle Homerian

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Stuart SUTHERLAND (Canada): I was mostly occupied by teaching and administration during 2014, and had done very little research on Silurian.

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TANG Peng (China): During the past year, I was working with a group led by Dr. Zhan Renbin on the Lower Paleozoic events. I was concentrating on the Silurian biostratigraphy using chitinozoans. Collaborating with graptolite and conodont experts, I mainly studied those microfossils and their biostratigraphy concerning the base of the Wenlock Series in the Ziyang-Langao Region, NW China. A total of 62 samples were processed from two sections in that area, and 5 microfossil groups were obtained, including chitinozoans, conodonts, acritarchs, scolecodonts and melanosclerites. It is the first time to find microfossils from the Llandovery-Wenlock boundary interval in this area. The discovery of conodonts from the clastic rocks is remarkable. More importantly, these new findings provide more information on the biostratigraphy of the possible candidate section of the base of the Wenlock Series in China. To get more material and to have a more detailed biostratigraphical investigation, more than 600 kg rock samples were collected from three sections in the Ziyang-Langao region last November. They are now being processed in the lab, and some preliminary results are very satisfactory. Besides, I am also collaborating with Fan Junxuan and Jacque Verniers on the chitinozoan biostratigraphy around the base of Telychian at the Bajiaomia section of Shennongjia, northwestern Hubei Province, central China. Abundant well-preserved chitinozoans have been obtained. Some preliminary results will be finished in the first half of 2015.

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Zuzana TASÁRYOVÁ (Czech Republic): Study of Ludlow succession and re-evaluation of potential Silurian GSSPs in the Prague Synform has been carried out under the leadership of Petr Štorch. Geochemistry of potential GSSP candidate – Rhuddanian-Aeronian boundary section in Hlasna Treban – has been evaluated. Furthermore, study integrating basalt geochemistry and paleomagnetism of the Prague Basin has been completed in collaboration with Petr Pruner, Vojtěch Janoušek, Petr Štorch and Jiří Frýda. One paper dealing with magma genesis and implications for Gondwana margin break-up and the other discussing paleogeography and Perunica microplate are currently in progress. Preliminary results – paleolatitudes and geotectonic setting of Gorstian volcanism in the western part of the Prague Basin were published (Tasáryová *et al.*, 2014a). Moreover, alteration effects on basalts and cumulates – diffusional sea-floor metasomatism – modifying primary geochemical signatures have been evaluated in Tasáryová *et al.* (2014b).

Zuzana Tasáryová

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Alain THOMAS (United Kingdom): As usual, I was working on the Lower Paleozoic trilobites and some related problems in 2014. Some preliminary results had been published by myself together with my colleagues, and I also attended some relevant symposiums and conferences last year.

Alain T. Thomas (PhD)

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Petra TONAROVÁ (Czech Republic/Estonia): I have continued in working on the compilation of distribution charts of Silurian scolecodonts, in cooperation with Olle Hints (Tallinn, Estonia) and Mats Eriksson (Lund, Sweden). The study on fauna from the upper Llandovery and lower Wenlock was published in Tonarová *et al.* (2014). The ongoing research is focusing on the Ordovician/Silurian transitional interval, including an evaluation of the impact of the end-Ordovician extinction event. We have started to study this time interval in Estonia (Baltica terrane) and we will study also the samples from the Prague Basin (peri-Gondwana terrane).

Petra Tonarová

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Thijs VANDENBROUCKE (France): I remain interested in reconstructing the Silurian and Ordovician palaeoclimate and palaeoenvironment. MSc student Thomas Steeman graduated last year, and is now publishing the results of his study on the Wenlock-Ludlow of the Welsh Basin; this is part of a larger research project coordinated by Mark Williams at the University of Leicester (UK) and funded by the Leverhulme Trust. Further work on these strata is on-going, as well as on time-equivalent sections on Gotland (with Axel Munnecke, Erlangen University and Poul Emsbo, USGS), and on other sections in the Welsh Basin (e.g., the type Llandovery, with Jeremy Davies, BGS, and co-workers).

Two PhD students currently work with Thijs in Lille on (mainly) Ordovician topics: Chloé Amberg's project concentrates on identifying and documenting Pre-Hirnantian glaciations. Lorena Tessitore's project is part of the ANR research grant "SeqStrat-Ice: Lessons from our Ancient Frozen Planet" (Project coordinator: J.F. Ghienne, University of Strasbourg/CNRS, 2013-2017: <http://seqstrat-ice.unistra.fr>). This ANR grant focuses on the glacial deposits of the Upper Ordovician, and our first results are now published (Ghienne et al., 2014: [doi:10.1038/ncomms5485](https://doi.org/10.1038/ncomms5485)). Thijs also co-supervises Matthias Sinnesael, who has recently started a PhD project with Philippe Claeys at the VUB

(Belgium), focussing on astronomical forcing during the Late Ordovician, but who is also interested in the Silurian.

Thisjs also remains active as one of the coordinators of the IGCP 591 project. All information can be found on our website www.igcp591.org. The group is looking forward to seeing you at one of their next meetings, this year in Quebec (our main Annual Meeting, together with ISSS), Harrisonburg (together with ISOS) and Marrakesh (with RALI). Please also note the dates for the final meeting of this IGCP project: 6-9 July 2016 in Ghent, Belgium (formal announcement soon).

Thisjs Vandenbroucke

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Viive VIIRA (Estonia): I am now working mainly on the Ordovician conodonts.

Viive Viira

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Olev VINN (Estonia): I am actively working on the paleontology of problematic calcareous tubeworms from the Paleozoic (e.g. cornulitids, tentaculitids, microconchids etc.) and evolution of tubeworm biomineralization. My second research interest is trace fossils in the Silurian, especially bioclastrations. I am especially interested in the evolution of symbiotic interactions and predation. I am also working on the evolution of bioerosion and biofouling of hard substrates in the Silurian of Baltica. In 2014, I received Palaeontological Association (UK) Research Grant for studying the bioerosion and encrustation of hard substrates in the Silurian of Baltica.

Olev Vinn

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WANG Guangxu (China): I finished my PhD at NIGP in July 2014, and am currently working as a research assistant there. My PhD thesis is focusing on the Ordovician-Silurian boundary stratigraphy and corals of South China. Our investigations reveal the complete coral sequence across the Ordovician-Silurian transition, which contributes to the new understanding of the bioevents during this time interval. Some of these results have been already published.

Wang Guangxu

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WANG Jian (China): I am working on Silurian paleontological and stratigraphic research. In recent years, I am mainly focusing on Llandorvery and Wenlock sections in Shaanxi Province, central China. I am currently in charge of a research project “Study of typical Silurian sections of Shaanxi Province, China” supported by China Geological Survey (2012–2015).

Wang Jian

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WANG Wenhui (China): I continue my work on the integrated study of Early Paleozoic chitinozoans, acritarchs and graptolites from South China and Northwest China. At the beginning of 2014, I spent some time on some characteristic Early Ordovician acritarchs which are of great biostratigraphic and paleogeographic potential. Later on, I carried out a study on Middle Ordovician chitinozoans and graptolites from both Anhui and Qinghai provinces in China, in hope of working out the biogeographic relationship between these two different Terranes during the Middle Ordovician. Now, my research is focusing on early Silurian graptolites mainly from the Yangtze region of South China. The study on the biostratigraphy of Ordovician-Silurian boundary graptolitic shales will help to clear up the geographic and biostratigraphic distribution of black shales in South China. These black shales which deposited during the end Ordovician to early Silurian are of great potential in yielding shale gas. Now, I am also the secretary of chitinozoan subcommion of CIMP.

Wang Wenhui

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WANG Xiaofeng (China): In 2014, I continued to work on the Silurian subdivision and correlation, and the Ordovician-Cambrian boundaries in South China, together with my colleagues, such as Chen Xiaohong (chitinozoan), Wang Chuanshang (graptolites), Svend Stouge (Conodont) and Jörg Maletz (graptolites). Besides, I was also involved in a new project on the protection of “golden spike” sections and the post-GSSP study in China, such as the Wangjiawang (base of Hirnantian) and Huanghuachang (base of Dapingian) sections near Yichang. The project was initiated by the Chinese Commission of Stratigraphy (CCS).

My institute (original Yichang Institute of Geology and Mineral Resources) was moved into the Wuhan City, the capital of Hubei Province in 2000. The new address of mine is below

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WANG Yi (China): In 2014, I was focusing in three Silurian projects. The first (with JY Rong, B Huang) was to investigate the high-resolution correlation of Silurian in China. The second (with P Tang, Q Jiang *et al.*) concerns the early evolution of land plants (including macro- and micro-fossils) in South China and Tarim. And lastly, together with B Huang, P Tang *et al.*, I was studying the correlation of rocks around the boundary of Middle Paleozoic (Silurian to Lower Devonian), and the tectonic evolution of South China paleoplate during this particular time interval. I am now, together with my domestic and international colleagues, mainly interested in the origin and evolution of Chinese Silurian land plants, and their macroevolutionary, paleoecological and stratigraphical implications.

Wang Yi

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Anthony WRIGHT (Australia): My work is focused on Devonian coral faunas. A paper on French Devonian calceolides, with Yves Plusquellec and Rémy Gourvenec, is finally (to the relief of my very patient colleagues) approaching completion, after the discovery in the University of Rennes of important material from Brittany, collected by Collin and documented by him in papers during the 1920s. Documentation of much calceolide material remains to be finalised (Viet Nam, South China, Poland, Germany, Morocco, NSW and Queensland); field work and museum studies in Lyon, Vietnam and South China were focused on some quite poorly known Devonian calceolide taxa. Very sadly, my German colleague Harald Prescher died suddenly last year, cutting short much of our planned research on Eifel *Calceola* faunas.

Dr. Ross McLean has recently returned to Australia and is now an honorary fellow at the University of Wollongong. We plan to collaborate in the study of some New South Wales Silurian corals. Dr. Michael Garratt is also a fellow of the university, and is carrying out studies of Silurian plant fossils in the Melbourne Trough. Studies of NSW Silurian graptolite faunas that were being carried out with the late Prof. Barrie Rickards are now expected to progress with Dr. Lawrence Sherwin providing graptolite expertise. Research on Iranian Silurian faunas is almost complete, with the exception of one trilobite fauna.

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ZHAN Renbin (China): Together with my colleagues at Nanjing Institute of Geology and Palaeontology (NIGP) and the Western University of Canada, in 2014, I was working on some Silurian fossil plants from Anticosti Island, Canada, and some brachiopods from the Zhangwan Formation (Aeronian, Llandovery) in Xichuan, southwestern Henan Province, central China. The brachiopod *Cathaysiorthis* Fauna has been found in the Zhangwan Formation for the first time, which helps us further investigate the ever-lasting debate on the regional geology of that area and suggest its South China affinity.

In 2014, I was organizing an international workshop for IGCP Project 591, ISSS, ISOS and ISCS which was held in Yunnan University (Kunming China) during August 12 and 15 followed by a 6-day field excursion visiting the Lower Paleozoic of South China, Indo-China and Sibumasu paleoplates. Delegates at the meeting include 47 experts from 17 western countries, and altogether 128 attendees with domestic representatives included.

Zhan Renbin

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ZHANG Yuandong (China): In 2014, I was continuously working on: **(1)** Systematics of the late Katian to Rhuddanian graptolites from the Hanggai area, northwestern Zhejiang Province, E. China. In that area, a complete Ordovician-Silurian transitional graptolite succession has been discovered based on a big collection of specimens, including *Dicellograptus complexus*, *Paraorthograptus pacificus*, *Metabolograptus extraordinarius*, *Metabolograptus persculptus*, *Akidograptus ascensus*, and *Parakidograptus acuminatus* biozones. Such succession could be taken as a reference standard of the Lower Yangtze Region for the correlation of Ordovician-Silurian transition. **(2)** Geological characteristics of representative black shales in China. This has been the main tasks of a recently launching project on shale gas exploration in China supported by the Chinese Academy of Sciences (2014-2018). As scheduled, several drill holes will be conducted for the most potential shale gas in China, i.e. Early Cambrian, Darriwilian-Sandbian (Ordovician), Late Katian to Llandovery (Silurian), Lopingian (Late Permian), and Late Triassic (non-marine facies). In 2014, four holes have already been finished in Yichang and Shennongjia districts, Hubei Province. The drill holes started from the Llandovery and are all the way down through to the Upper Tremadocian. All samples from the drill holes are now stored in Nanjing Institute of Geology and Palaeontology (NIGP) and opened to global scientists who are interested in relevant study. Anybody wants to involve in this work, please contact the project leader (Zhang Yuandong) without any hesitation.

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ZHAO Wenjin (China): My scientific interests still focus on the Siluro-Devonian vertebrate paleontology, and relative stratigraphy, paleogeography, and paleo-environmental changes in 2014. The main achievement this year can be represented by the discovery of the largest known Silurian fish *Megamastax amblyodus*. The bony fish, with an estimated length of about 1 meter from the Silurian Kuantu Formation in Yunnan Province of southwestern China, reveals that pre-Devonian gnathostomes could attain comparatively large sizes, and challenges current theories regarding atmospheric oxygen levels during early Earth history.

In addition, I went to Kunming (China) to attend the IGCP591 Field Workshop 2014 jointly with ISCS, ISOS, and ISSS held in August 12 to 21, 2014, and gave a talk of “A review of Silurian fishes from Yunnan, China and related biostratigraphy”. I conducted the field work in Ningxia Hui Autonomous Region of China from September 16 to 30, 2014, supported by a Special Grant for Fossil Excavation and Preparation of the Chinese Academy of Sciences. Some new important and interesting fossil fishes have been found and collected during the excursion.

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RECENT PUBLICATIONS ON THE SILURIAN RESEARCH

[Note that a few publications are of 2013 or even before that were not included in previous Silurian Times, and some papers are dealing with Ordovician topics by members of ISSS.]

- Ainsaar, L., Männik, P. and Meidla, T. 2014. Stop B2: Eivere quarry. *In*: Bauert, H., Hints, O., Meidla, T. and Männik, P. (eds), 4th Annual Meeting of IGCP 591 - Tartu 2014. Abstracts and Field Guide, 178–179.
- Ainsaar, L., Tinn, O., Männik, P. and Meidla, T. 2014. Stop B1: Kalana quarry. *In*: Bauert, H., Hints, O., Meidla, T. and Männik, P. (eds), 4th Annual Meeting of IGCP 591 - Tartu 2014. Abstracts and Field Guide, 174–177.
- Antoshkina, A. 2015. Ooid-stromatolite association as a precursor of bioevents (Silurian, Timan–northern Ural Region). *Palaeoworld*, 24(1-2).
- Antoshkina, A.I. 2014. Palaeomicrocodium: A new view on its origin. *Paleontological Journal*, 48(4), 353–368.
- Antoshkina, A.I. and Ponomarenko, E.S. 2014. Bioinduced crustification as a reaction of Late Carboniferous–Early Permian reef ecosystems to biosphere changes. *Paleontological Journal*, 48(14), 1565–1576.
- Antoshkina, A.I., Ponomarenko, E.C. and Kaneva, N.A. 2014. Fenestral limestones: Specific features of Late Devonian sea in the Timan–North Urals Region. *Lithology and Mineral Resources*, 49(6), 461–472.
- Antoshkina, A.I., Shmeleva, L.A. and Männik, P. 2014. Stratigraphy of the Ordovician–Silurian transition in the Northern Urals: state of art and problems. *In*: Bauert, H., Hints, O., Meidla, T. and Männik, P. (eds), 4th Annual Meeting of IGCP 591 - Tartu 2014. Abstracts and Field Guide, 11.
- Baarli, B.G. 2014. The early Rhuddanian survival interval in the lower Silurian of the Oslo Region: A third pulse of the end-Ordovician extinction. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 395, 29–41.
- Batchelor, R.A. 2014. Geochemistry of upper Ordovician metabentonites and their cognate apatite microphenocrysts from Norway and Sweden. *GFF (Geologisk Föreningens Förhandlingar)*, 136, 387–397.
- Batchelor, R.A. 2014. Metabentonites from the Sandbian Stage (Upper Ordovician) in Scotland - a geochemical comparison with their equivalents in Baltoscandia. *Scottish Journal of Geology*, 50, 159–163.
- Bauert, H., Hints, O., Meidla, T. and Männik, P. (eds). 2014. 4th Annual Meeting of IGCP 591, Estonia, 10–19 June 2014. Abstracts and Field Guide. University of Tartu, Tartu, 202 pp.
- Beznosova, T.M., Lukin, V.Yu., Männik, P., Majdl', T.V. and Matveev, V.A. 2014. Stratigraphy and depositional environments of Silurian strata on the Chernov Swell. *In*: Ashabov, A.M. (ed.), Geology and mineral resources in the southeast part of the European Russia. XVI Geological Congress of Komi Republic - Syktyvkar 2014, 224–228 (in Russian).
- Beznosova, T.M., Männik, P. and Sokolova, L.V. 2014. Brachiopods and conodonts in the Llandovery–Wenlock boundary interval in the Timan–northern Ural region. *In*: Bauert, H., Hints, O., Meidla, T. and Männik, P. (eds), 4th Annual Meeting of IGCP 591 - Tartu

2014. Abstracts and Field Guide, 18.
- Blieck, A. 2014. Les Vertébrés Ptéraspidomorphes (Ordovicien-Dévonien) et leur utilisation en sciences de la vie et de la Terre. *In: Les Fossiles: objets géologiques, objets biologiques (Congrès annuel APF – Réunion spécialisée SGF, Paris, 14–17 mai 2014)*. Résumé, 7; APF et SGF (in French).
- Blieck, A. and De Baere, J.-P. (eds). 2014. La Société géologique du Nord et l’histoire des sciences de la Terre dans le nord de la France. *Mémoires de la Société géologique du Nord, XVII*, 183 p., illustré (15 articles, 22 auteurs); Société géologique du Nord édit., Villeneuve d’Ascq.
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2. Brief introduction of new Siliurian workers

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Date of birth: 25 January, 1977

Affiliation: Dipartimento di Scienze Chimiche e Geologiche, UNiversità di Cagliari

Education: 2007 - Degree in geological sciences at Cagliari University

2007-2011: PhD in geological sciences at Cagliari University (conodont biostratigraphy across the Silurian-Devonian boundary in selected north-Gondwana regions; supervised by Prof. Carlo Corradini)

2012-present: post-doc (upper Silurian and Lower Devonian conodont biostratigraphy)

Awards: March 2014--The Hinde Medal awarded by the Pander Society

Present position: post-Doc position ("Assegnista di ricerca") at Department of Chemical and Geological Sciences at Cagliari University

Research interests

-Silurian and Lower Devonian conodont taxonomy and biostratigraphy

Jorge Colmenar LALLENA

Date of birth: 18 June, 1984

Affiliation: University of Zaragoza, Spain

Education: Degree in Geology (specialty in palaeontology), Doctor of Science by the University of Zaragoza

Present position: Autonomous researcher

Research interests: Ordovician and Silurian brachiopods; taxonomy; diversity patterns through time; mass extinction, and recovery of brachiopod faunas in Gondwana; paleoecology of benthic communities; palaeobiogeography; functional morphology.

Kristina MEHLQVIST

Date of birth: 17 September, 1984

Affiliation and address: Previous affiliation:

Department of Geology, Lund University, Sölvegatan 12, SE-223 62 Lund, Sweden

Education:

Doctoral degree in geology at Lund University, December 2013: Natural Science/Geology "Early land plant spores from the Paleozoic of Sweden – taxonomy, stratigraphy and paleoenvironments". *LITHOLUND theses No 23. Doctoral thesis*, Department of Geology, Lund University. Supervisors: Vivi Vajda, Kent Larsson; Department of Geology, Lund University, Sweden and Philippe Steemans, University of Liège, Belgium.

Present position: I am now applying for a postdoc grant.

Research interests: I am interested in Paleozoic palynology, especially spores from early land plants of Silurian age from Baltica. My PhD-project focused on spores from early land plants from Silurian outcrop sections and drillcores in Sweden with the aim to describe the earliest floras of Sweden, and to date the host strata using biostratigraphy of fossil land plant spores and make paleoenvironmental interpretations based on palynofacies analyses.

WANG Guangxu

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Affiliation:

State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences (NIGPAS), 39 East Beijing Road, Nanjing 210008, China.

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2004–2008: Nanyang Normal University, Nanyang, China; Biology;
2008–2011: NIGPAS, Nanjing, China; Palaeontology – Geology (Master thesis: Early Silurian corals from the Baiyun’an Formation of Huaying Mountain, Sichuan, SW China; supervised by Prof. ZHAN Renbin);
2011–2014: NIGPAS, Nanjing, China; Palaeontology – Geology (Ph D thesis: Coral faunas across the Ordovician-Silurian transition of South China: Implications for paleobiogeography and macroevolution; supervised by Prof. ZHAN Renbin).

Awards: November 2013--National Awards for the Outstanding Ph.D Students awarded by the Ministry of Education of China

Present position: Research assistant at NIGPAS.

Research interests:

Systematics, palaeoecology, palaeogeography and macroevolution of Ordovician and Silurian corals;
Ordovician and Silurian stratigraphy.
